MASTER PATIENT INDEX (MPI) V*ISTA*

TECHNICAL MANUAL

Version 1.0

Revised November 2001

Department of Veterans Affairs
VHA OI System Design & Development (SD&D)
Information Infrastructure Service (IIS)

Revision History

Patch	Brief Summary	Status
MPIF*1*11	CIRN Master of Record (CMOR) Request menu was changed, replacing CIRN with Coordinating. New options, changed existing option names, changes to existing reports all related to the CMOR Request functionality.	Released 11/27/01
MPIF*1*9	Inactivate a Patient from MPI option: 1. Are you sure?" prompt added when inactivating an ICN from the MPI 2. More descriptive message displayed when the ICN Inactivation process has been completed. Prior to this patch, it just displayed, "DONE". It has been changed to "*** Inactivated on YOUR system, message sent to MPI to Inactivate ***". This change has been made and is in routine MPIFDEL.	Released 6/7/01
MPIF*1*8	Corrected to display Mother's Maiden Name during the Display Only Query when it is returned from the MPI. This has been corrected in routine MPIFQ1.	Release 11/28/00
RG*1*19	Update Menu Structure. Remove Obsolete Menus and Options.	Released 10/11/01
	Master Patient Index (MPI) **V***IST***A**, User Manual, Version 1.0 was released.	Released 4/99

Contents

Figures

Orientation

How to Use this Manual

This manual is intended for use in conjunction with the Master Patient Index (MPI) **V*IST*A** package. Items included in this release, such as routines and files, are briefly described for quick reference.

This manual uses several methods to highlight different aspects of the material. "Snapshots" of computer dialogue (or other online displays) are shown in a non-proportional font and enclosed within a box. User responses to online prompts are highlighted in boldface. Boldface is also used to highlight a descriptive word or sentence. The Return or Enter key is illustrated by the symbol **<RET>** when displayed in computer dialogue and is included in examples only when it may be unclear to the reader that such a keystroke must be entered. The following example indicates that you should type two question marks followed by pressing **<RET>** when prompted to select an option:

```
Select Primary Menu option: ??
```

Figure 1 - How to access online help

M (MUMPS) code, variable names, acronyms, the formal name of options, actual field names, file names, and security keys are represented with all uppercase letters.

Who Should Read this Manual?

This manual has been written with many job functions in mind. Hospital personnel, Patient Information Management System (PIMS) Automated Data Processing Application Coordinators (ADPACs), and IRM personnel involved with using all aspects of the Master Patient Index (MPI) and implementing and making changes affecting Coordinating Master of Record (CMOR) sites should read this manual.

How to Obtain Technical Information Online

Online documentation about the Master Patient Index (MPI) **V*IST*A** package may be obtained in any one of the following ways.

Retrieving Online Help Using Question Marks

The use of question marks at the file and field level is described in the *VA FileMan Technical Manual*. The use of question marks within the menu system invokes help about options and menus. One question mark at the top-level menu prompt displays the items available on the menu. Two question marks will show the Common Menu available to all users, as well as any secondary menu options for the current user. Locked options are displayed, if the user holds the key. Three question marks display descriptions of the options from the OPTION file (#19). Four question marks display a help frame, if one has been associated with this option in the OPTION file. A question mark followed by the name of an option on the current menu displays a help frame, if one has been named for that option in the OPTION file.

Print Options File

The option Print Option File, in the Kernel's Menu Management Menu, displays a list of namespaced options associated with the Master Patient Index (MPI) **V***IST***A** package. Other namespaced entries may also be retrieved from the PRINT TEMPLATE (#.4), INPUT TEMPLATE (#.402), and SORT TEMPLATE (#.401) files, and the SECURITY KEY (#19.1), FUNCTION (#.5), BULLETIN (#3.6), and HELP FRAME (#9.2) files.

List File Attributes

This VA FileMan option allows the user to generate documentation pertaining to files and file structure. Utilization of this option via the "Standard" format will yield the following data dictionary information for a specified file(s): file name and description, identifiers, cross-references, files pointed to by the file specified, files which point to the file specified, input templates, print templates, and sort templates. In addition, the following applicable data is supplied for each field in the file: field name, number, title, global location, description, help prompt, cross-reference(s), input transform, date last edited, and notes.

Using the "Global Map" format of this option generates a list of all cross-references for the file selected, global location of each field in the file, input templates, print templates, and sort templates.

Inquire to Option File

This Menu Manager option provides the following information about a specified option(s): option name, menu text, option description, type of option, and lock, if any. In addition, all items on the menu are listed for each menu option.

To secure information about Master Patient Index (MPI) **V***IST***A** options, the user must specify the name or namespace of the option(s) desired.

Introduction

This is the Technical Manual for the Master Patient Index **V*IST*A**. In order to competently operate this package you must be familiar with the operations of the **V*IST*A** computer system in general.

Online help is provided at all prompts by typing one or two question marks.

Reference Material

In order to competently operate this package you must be familiar with the operations of the **V*IST*A** computer system in general. If you do not use the system on a regular basis, it is recommended that you review the *User's Guide to Computing*. This manual will familiarize you with standard **V*IST*A** conventions.

The MPI **V*IST*A** product documentation includes the following manuals:

- *Master Patient Index (MPI) VISTA Release Notes*
- *Master Patient Index (MPI) VISTA HL7 Interface Specifications*
- *Master Patient Index (MPI) VISTA User Manual*
- *Master Patient Index (MPI) VISTA Programmer Manual*
- *Master Patient Index (MPI) VISTA Technical Manual*
- *Master Patient Index (MPI) VISTA Monograph*

The Master Patient Index **V*IST*A** and Patient Demographics (PD) are distributed and installed together. All installation information and procedures involved with MPI are included in the following MPI/PD documents:

- *CIRN Patient Demographics (CIRN-PD) Pre-Installation and Implementation Guide*
- *Master Patient Index/Patient Demographics (MPI/PD) Installation and Implementation Guide*

For more information about the Patient Demographics (PD), see the product documentation listed below.

- *Master Patient Index/Patient Demographics (MPI/PD) Technical Manual*
- *Master Patient Index/Patient Demographics (MPI/PD) User Manual*
- *Master Patient Index/Patient Demographics (MPI/PD HL7 Interface Manual*

Because of the close interaction between MPI and other packages, you may also find it helpful to review the documentation for:

- **V*IST*A** *HL7 V. 1.6*
- *PIMS V. 5.3 Admission, Discharge and Transfer (ADT)*
- *MailMan V. 7.1 (Patch XM*7.1*50)*

Distinguishing MPI (Austin) From MPI V*IST*A

MPI (Austin) refers to the actual index located at the Austin Automation Center (AAC). MPI **V***IST***A** refers to the software that resides in **V***IST***A** and sends patient data to the MPI (Austin) and to all sites where a patient has been seen. The two sides of the MPI work together as one component. For the most part, when this manual references the MPI, it is referencing the actual index at Austin. However, the terms MPI (Austin) and MPI **V***IST***A** are used when it is not obvious to the reader which component of the MPI the documentation is referring to.

Product Description: What is the Master Patient Index?

There are over 140 Veterans Health Administration (VHA) databases and more than 160 Veterans Health Information Systems and Technology Architecture **V*IST*A** systems in use around the country. Because of this wide distribution of information, there is great potential for individual patient data to be kept under more than one identification number. To support maintenance of a unique patient identifier and a single master index of all VA patients and to allow messaging of patient information among the institutional partners (i.e., VHA, Veterans Benefits Administration (VBA), Board of Veterans Appeals (BVA), and National Cemetery Service (NCS)) the Master Patient Index (MPI) has been created. The MPI maintains a central index to correctly identify each patient and track the Coordinating Master of Record (CMOR) site. MPI data is maintained in a centralized, dynamic database that is available to meet multiple information needs across many systems.

The Master Patient Index (MPI) contains the following three modules:

1. Master Patient Index (Austin)
2. Master Patient Index **V*IST*A**
3. Coordinating Master of Record (CMOR)

This product description describes each module listed above from its own perspective, and briefly explains the interaction between each.

Master Patient Index (Austin)

The MPI located at the Austin Automation Center (AAC) is the actual index. It's composed of a unique list of patients and a current list of VAMCs where each patient has been seen. This enables the sharing of patient data between operationally diverse systems. Each record (or index entry) in the MPI contains a small amount of patient data used to identify individual entries.

The MPI (Austin) assigns each patient the following:

1 A unique patient identifier (Integration Control Number or ICN).
2 Initially assigns the requesting site as the Coordinating Master Of Record (CMOR).

Each index entry in the MPI contains the patient's identifying information (e.g., Name, SSN, Date of Birth) and a current list of facilities where the patient has been seen. The MPI is updated as new patients are added or demographic information is updated at any of the Veterans Affairs Medical Centers (VAMC).

Once a CMOR has been assigned to a patient, the MPI will only accept changes and/or updates to that patient's demographic data from the CMOR site. However, the CMOR can be changed at any time.

(For more information on the Coordinating Master of Record [CMOR], see the topic by the same name that follows in this Product Description.)

The MPI hardware is housed at the Austin Automation Center (AAC). Hardware and general support will be handled at the AAC. The software comprising the MPI (Austin) was written by a contractor. Software support will be handled through the **V*IST*A** National Support Desk, similar to any **V*IST*A** package.

Master Patient Index V*IST*A

This software resides in **V*IST*A** and sends patient data to the MPI (Austin) and to sites where a patient has been seen. MPI **V*IST*A** enables sites to query the MPI (Austin) for known data, to request the assignment of an ICN, to inactivate an ICN, and to manage incoming and outgoing Change CMOR requests.

During the initialization of the MPI (Austin) each VA Medical Center sends batch HL7 messages to the MPI (Austin) requesting ICNs for all of its patients whose records reflect activity in the past three fiscal years (i.e., patient records that contain CMOR Activity Scores). Patients are checked against the MPI and one of the following scenarios occurs:

1. If a patient is introduced to the MPI for the first time, it is added directly to the index, an ICN is assigned to that patient, and the current (sending) site becomes the CMOR.

2. If an exact match is found for that patient (i.e., the patient has already been initialized to the MPI from another site), the current (sending) site is added to the list of treating facilities where the patient has been seen. The CMOR remains the same.

3. If multiple patient entries are found in the MPI that closely match the patient's identifying information:

    a. A notation is made in the CIRN HL7 EXCEPTION LOG file (#991.1) indicating that a list of potential matches has been found. The HL7 message is sent back to the sending site and processed, instead of the ICN and CMOR normally returned.

    b. An option, View Potential Match Patient, is available on the Message Exception Menu. It prints a list of patients who have been identified as having multiple potential matches on the MPI and who haven't yet been resolved using the option Single Patient Initialization to MPI. Patient entries are listed by Name, Social Security Number, Date of Birth, and DFN. The status of the patient entry is current as of the date/time the report is generated. This data is pulled from the CIRN HL7 EXCEPTION LOG file (#991.1).

    c. If the correct patient entry is located on the report, it must then be resolved using the option Single Patient Initialization to MPI.

Once the initialization has been completed, the data at the MPI (Austin) is kept up-to-date through MPI **V*IST*A**, Master Patient Index/Patient Demographics (MPI/PD), and Patient Information Management System (PIMS) menu options.

If you are using any one of the following PIMS options:

- Load/Edit Patient Data,
- Register a Patient,
- 10-10T Registration, or
- Electronic 10-10EZ Processing

to add a new patient to your local PATIENT file (#2), or if you select a patient who did not receive an ICN during initialization, a real-time request for an ICN and CMOR is sent to the MPI (Austin). This ensures that the MPI (Austin) will be kept up-to-date with active patients.

Coordinating Master of Record (CMOR)

The function of the Coordinating Master of Record (CMOR) site (i.e., VAMC) is to advise other site(s) when demographic data is changed for a shared patient after that patient has been established in the MPI (Austin). The CMOR is initially the first site that identifies a patient to the MPI (Austin). It can be changed to a different site for a shared patient during the implementation phase when the CMOR Batch Comparison process is executed. This process utilizes CMOR Activity Scores to determine if the CMOR should be automatically changed. The CMOR can also be changed by using the MPI **V*IST*A** option Create a New CMOR Change Request. The CMOR is not analogous with the notion of Preferred Facility as it relates to PIMS. Additionally, CMOR sites do not receive endorsed funding that is NOT part of the regular course for patient care.

During the pre-implementation phase of the MPI (i.e., the MPI/PD Pre-Implementation), patients who've been seen during the last three years are assigned CMOR activity scores. Only patient records that contain CMOR activity scores are initialized to the MPI (Austin).

During the initialization of VAMC patient databases with the MPI (Austin), the first site to identify a patient to the MPI is designated as the CMOR. After that, every other site where that patient has had activity in the last three years that makes itself known to the MPI is added to the list of treating facilities for that patient.

Following the initialization process at each VAMC, patients CMOR Activity Scores for all non-CMOR sites are compared to determine if the CMOR should be changed. If a non-CMOR site has a higher CMOR Activity Score for a patient and the difference is greater than 80%, the current CMOR sends an HL7 message to the MPI (Austin) and to all sites, which have treated this patient informing them that the CMOR has changed.

Implementation and Maintenance

Master Patient Index (MPI) **V*IST*A** is a Kernel Installation and Distribution System (KIDS) software release.

Package Requirements

The Master Patient Index **V*IST*A** package requires a standard **V*IST*A** operating environment in order to function correctly. Check your **V*IST*A** environment for packages and versions installed.

The following packages (fully patched) must be installed at the site:

CAUTION!!
DO NOT INSTALL HL*1.6*39 in any TEST account!
If you install this patch in your test account, you will link your test account to all the other production accounts. Since there are similarities (e.g., patient names/data) in test and production, it would not be good for data from the test account to be transmitted to the production account at another site.

Application	Version # and Patches
CIRN	Version 0.5 fully patched
Scheduling	Version 5.3 SD*5.3*185
PIMS	Version 5.3 fully patched
HL7	**Version 1.6 fully patched** **NOTE:** Place HL*1.6*39 in Production account only
MailMan	Version 7.1 XM*DBA*115
KERNEL	Version 8 fully patched
KERNEL Toolkit	Version 7.3 fully patched
VA FileMan	**Version 22 fully patched**
Run Time Library	Version 2.1
Pharmacy	If running Computerized Patient Record System (CPRS), fully patched version of Outpatient Pharmacy V. 7.0, and Inpatient V. 5.0.

Figure 2: Package Requirements

NOTE: If you are a Cache site and are planning to use a multi-threaded listener (which is recommended), you will need patch XU*8.0*78.

Site Parameters

The following mail groups are exported in the MPI package. They are listed by Mail Group name, and a brief description is given:

Mail Group Name	Description
MPIF EXCEPTIONS	If a server address is not populated in the CIRN HL7 EXCEPTIONS TYPE file (#991.11), MAIL GROUP field (#6), MPI exception e-mail messages (problems) that need to be addressed are sent to this mail group. These messages are all technical in nature, involving problems with HL7 messages or conflicts resulting from CMORs or ICNs not found. Any messages sent to the MPIF EXCEPTIONS mail group are automatically sent to the remote mail group G.CIRN EXCEPTION MGT@FORUM.VA.GOV. Normally there isn't anything a site can do to resolve these messages, which is why they are not sent to local members. If necessary, members of this remote mail group will contact site personnel for assistance. Note: The remote member is populated automatically.
MPIF HL7 GROUP	If HL7 messages are automatically sent to the MPI at the Austin Automation Center via the MailMan protocol will this mail group be utilized. This mail group contains the remote member: S.HL V16 SERVER@MPI.ISC-ALBANY.VA.GOV. No other members should be added to this group.
MPIF CMOR REQUEST	Any requests to change the CMOR will be sent to this Mail Group. Requests will then be processed (i.e., accepted/rejected) via the CMOR options. The messages serve as a heads-up that there are CMOR requests to process. This is also the mail group where the notifications that a request has been processed at another site and the outcome. **Note:** This Mail Group is added to the MAIL GROUP file (#3.8) during the Post-Init of the installation.

Figure 3: Mail groups exported in the MPI package

Note: IRM personnel will be required to use MailMan utilities to add members to the following mail groups:

- MPIF CMOR REQUEST
- RG CIRN DEMOGRAPHIC ISSUES (Exported with MPI/PD. However, utilized by MPI.)

PIMS personnel will most likely be the ones processing CMOR Requests and reviewing MPI/PD HL7 Exception Messages addressing data issues. They should be added as members of the MPIF CMOR REQUEST and RG CIRN DEMOGRAPHIC ISSUES mail groups. However, anyone

participating in this should be added in these mail groups. Members of the MPIF EXCEPTIONS mail group are notified of problems with HL7 messaging.

(For information on assigning members to mail groups, see the VA Electronic Mail System (MailMan) User Manual V. 7.1.)

Exception Mail Groups: MPIF EXCEPTIONS and RG CIRN DEMOGRAPHIC ISSUES

The mail groups MPIF EXCEPTIONS and RG CIRN DEMOGRAPHIC ISSUES are specifically used to receive MPI/PD HL7 Exception Messages. It is important to distinguish the difference between them.

1. Members of the MPIF EXCEPTIONS mail group are automatically notified of technical type problems (e.g., such as data update failures or problems with HL7 messages causing them not to be processed).
2. The RG CIRN DEMOGRAPHIC ISSUES mail group is exported with MPI/PD. Members of this mail group are automatically notified of problems relating to data, such as:

   - Patients dates of death not being synchronized between your local PATIENT file (#2) and the MPI.
   - Patient entries with missing required field(s) (i.e., Date of Birth or Name) when trying to add them to the MPI.
   - Potential matches were found during the initialization or during the Local/Missing ICN resolution job that need to be resolved manually in order to obtain an ICN.

   It is recommended that PIMS personnel (i.e., ADPACs and/or Coordinators, etc.) be made members of this mail group.

   (For information on MPI/PD HL7 Exception Messages see “Appendix C – Exceptions and Bulletins” of the "*Master Patient Index (MPI) VISTA User Manual,"* V. 1.0).

Background Jobs

The following three jobs need to be tasked to run in the background in support of MPI/PD.

Auto Change CMOR Night Job

Background job: [MPIF CMOR REQUEST AUTO JOB]

This job will look at all pending CMOR requests that have been received and if they are older than 14 days, they will be processed as if the auto accept parameter was enabled.

Local/Missing ICN Resolution

Background job: [MPIF LOC/MIS ICN RES]

Local ICNs

ICNs are created for new patients locally at the site when the MPI is unavailable to assign an ICN in real-time (e.g., the Direct Connect could not be established). Local ICNs contain the same number of digits as a national ICN. The only difference is that the first three digits are the VAMCs station number.

Note: It is not recommended that Local ICNs be sent to remote databases as they will only be known at the local facility that assigned them.

Missing ICNs

Patient records get an ICN assignment from the MPI in real time if they are added to the PATIENT file (#2) using any one of the PIMS options Load/Edit Patient Data, 10-10T Registration, Register a Patient, and Electronic 10-10EZ Processing.

Missing ICNs result from patient records that are added to the PATIENT file (#2) via means other than through these PIMS options. These records will not get an ICN assignment from the MPI in real time and they will be flagged internally for resolution.

Resolution of Local/Missing ICNs

The Local/Missing ICN Resolution background job should be scheduled to run via TaskMan at least once a day, typically after hours when there is less system activity. The Local/Missing ICN Resolution job will find all patients in the local PATIENT file (#2) with a Local ICN or that have been flagged as missing an ICN and send these patients to the MPI for a national ICN assignment. These patients are sent to the MPI requesting an ICN and CMOR, in batch HL7 messages (maximum of 100 patient entries each).

Note: Patch MPIF*1.0*10 has placed a screen on this job to not send patients that have a Potential Match Exception as they need manual intervention to be resolved. Patch MPIF*1.0*15 has added a date/time stamp to the "AICNL" cross-reference so that the Local ICNs will only be sent to the MPI once for resolution.

Through this background job, the MPI performs the following actions based of these possible scenarios:

1. If the patient is not already in the MPI:

   a. The patient is added to the index.
   b. The patient is assigned an ICN.
   c. The site sending the message becomes the CMOR.
   d. ICN and CMOR are returned to the site and the corresponding fields are updated.

2. If an exact match is found for the patient in the MPI:

   a. ICN and CMOR are returned to the site.
   b. The site is added to the list of treating facilities where the patient has been seen.
   c. Messages are sent to the CMOR requesting that this new site be added to the list of treating facilities and subscribers.

3. If multiple patient entries are found in the MPI that closely match the patient's identifying information:

   a. The HL7 message is sent back to the sending site and processed, instead of the ICN and CMOR normally returned. A new entry is made in the CIRN HL7 EXCEPTION LOG file (#991.1) indicating that a list of potential matches has been found for this patient.
   b. The View Potential Match Patient option is available on the Message Exception Menu. It prints a list of patients, as shown in the next figure. It lists patients who have been identified as having multiple potential matches on the MPI and who haven't yet been resolved using the option Single Patient Initialization to MPI. Patient entries are listed by Name, Social Security Number, Date of Birth, and DFN. The status of the patient is current as of the date/time the report is generated. This data is pulled from the CIRN HL7 EXCEPTION LOG file (#991.1).

```
Select Message Exception Menu Option: view Potential Match Patient

This report prints a list of patients who have been identified as having
multiple Potential Matches on the Master Patient Index (MPI) and who
haven't yet been resolved using the option "Single Patient Initialization
to MPI".
Status is current as of the date/time the report is generated.

This data is pulled from the MPI/PD HL7 EXCEPTION LOG file (#991.1).
Prior to producing the report, duplicate POTENTIAL MATCH patients will be
purged from the file.

...one moment please..

0 duplicate patient entries for POTENTIAL MATCH exceptions were
identified and deleted from the MPI/PD HL7 EXCEPTION LOG file (#991.1).

The right margin for this report is 80.

DEVICE: HOME// <RET>


PATIENT LIST of Potential Matches to be Resolved              Page: 1
Printed at ALBANY, NY on Aug 08, 2000@17:09

Patient Name                      SSN         DOB                  DFN
-------------------------------------------------------------------------

DOE,JOHN R                        123456789P  1940                 279
SMITH,DEBBIE                      123123123   1955                 337
HAR,HARRY P                       126126126P  1952                 381
TESTING,TILLIE                    111111111P  1952                 320
FRUGEL,FREDDY                     222222222P  1952                 319
TOTAL: 5
```

Figure 4: Report listing patients identified as having multiple potential matches on the MPI

Note: People also use the MPI/PD Exception Handling option to produce a report with a list of exceptions that have not yet been processed. You can sort the list by date (default), by patient, or by exception type. You can also choose to view only those of a selected exception type. For information on how to use this option, refer to the Master Patient Index/Patient Demographics (MPI/PD) User Manual, Revised October 2001. See the topic titled “Message Exception Menu” in the section “MPI/PD Patient Admin User Menu.”

c. These patients must then be resolved using the MPI option Single Patient Initialization to MPI.

   The MPI option Single Patient Initialization also establishes the TCP/IP direct connection with the MPI. It can also be used to initialize a patient record to the MPI that currently exists in the PATIENT file (#2), but that has no ICN and CMOR designation. (This option is documented in the "Exported Options" chapter of this manual.) It is recommended that this option be used when potential duplicate records have been found during the initialization phase or the Missing/Local ICN resolution job.

Potential Matching Patient Entries on the MPI

The situation may present itself where this background job processes a patient who has potential matching entries on the MPI [i.e., entries that closely match the patients identifying information (e.g., name, SSN, date of birth)]. This will result in the generation of a MPI Exception being logged in the CIRN HL7 EXCEPTION LOG file (#991.1).

Update Patient Information

Background job: [VAFC BATCH UPDATE]

The event of updating patient information can take place from several different options within **V*IST*A**, including VA FileMan. Changes to any of the fields listed below are recorded and an entry created in the ADT/HL7 PIVOT file (#391.71). The entry is then marked as pending to be transmitted. Direct sets to the globals cannot be collected. This background job will periodically collect (via a scheduled job) these marked events and broadcast an ADT-A08 Update Patient Information message on FORUM. Because it is not possible to determine if the editing of this field is complete, this background job [VAFC BATCH UPDATE] will periodically collect these marked events and broadcast an ADT A08 Message (i.e., Update Patient Information). This is a PIMS-generated HL7 message.

Field Number	Field Name
.01	NAME
.02	SEX
.03	DATE OF BIRTH
.05	MARITAL STATUS
.08	RELIGIOUS PREFERENCE
.09	SOCIAL SECURITY NUMBER
.111	STREET ADDRESS
.112	STREET ADDRESS [2]
.114	CITY
.115	STATE
.1112	ZIP+4
.117	COUNTY
.301	SERVICE CONNECTED
.302	SERVICE CONNECTED PERCENTAGE
.31115	EMPLOYMENT STATUS
.323	PERIOD OF SERVICE
.361	PRIMARY ELIGIBILITY CODE
391	PATIENT TYPE
1901	VETERAN (Y/N)
.351	DATE OF DEATH
.2403	MOTHER'S MAIDEN NAME
.131	PHONE NUMBER [RESIDENCE]
.132	PHONE NUMBER [WORK]
.219	K-PHONE NUMBER
.211	K-NAME

Figure 5: Data elements monitored in the PATIENT file (#2) for changes

(For more information on the ADT A08 Message — Update Patient Information, see the *Master Patient Index (MPI)* **V***IST***A** *HL7 Interface Specifications*.)

This background job also sends out Treating Facility "add me" messages and Treating Facility Update messages.

Note: This background job was originally exported in patch DG*5.3*91.

Routine Descriptions

The following routines are distributed with the release of the Master Patient Index (MPI) **V***IST***A**. A brief description is given for each routine.

Routine Name	Description
MPIF001	This routine contains several APIs. Line tag GETICN returns the ICN and ICN checksum for a given patient. Line tag GETDFN returns the IEN from the PATIENT file (#2) for the given ICN. Line tag CMOR2 returns the CMOR site name. Line tag CMORNAME returns the site name for a given INSTITITUTION file (#4) IEN. Line tag GETVCCI returns the CMOR station number for a given patient. Line tag IFLOCAL returns a zero (0) if the patient does not have a local ICN and a one (1) if the patient does. Line tag IFVCCI returns a one (1) if your site is the CMOR for a given patient or a -1 if your site is not. Line tag HL7CMOR returns the CMOR station number and CMOR site name for a given patient. Line tag CHANGE updates the CMOR in the PATIENT file (#2) for a given patient. Line tag SETICN updates the ICN and ICN checksum for a given patient in the PATIENT file (#2). Line tag SETLOC updates the Locally Assigned ICN field for a given patient. Line tag ICNLC retuns the ICN for a patient if one already exists. If an ICN doesn't exist, it will created a Local ICN and store all appropriate fields in the PATIENT file (#2).
MPIFA31I	This routine processes the A31 HL7 messages sent from the MPI. These messages contain the new ICN and CMOR assignments for a patient that was just added to the MPI.
MPIFAPI	This routine contains several APIs. Line tag EN2 gets the next Local ICN number when a Local ICN is to be assigned. Line tag MPILINK returns the MPI Logical Link. Line tag SUBNUM returns the Subscription Control Number for a given patient. Line tag MPINODE returns the MPI node in the PATIENT file (#2) for a given patient. Line tag UPDATE updates fields on the MPI node.
MPIFAREQ	This routine will automatically process any CMOR Change Request still pending review as approved.
MPIFBT1	This routine creates the initialization messages for sending to the MPI in Austin. Each batch message contains at most 100 patients. Only patients that have a CMOR Activity Score are sent to the MPI for assignment of an ICN.
MPIFBT2	This routine processes the batch message sent from the MPI during the initialization phase and during resolution of missing and local ICNs. Each batch message contains at most 100 patients. The MPI returns an ICN, CMOR and a list of known treating facilities. These fields are then updated in **V***IST***A**.
MPIFCMOR	This routine sends out the change of CMOR message to the MPI and all subscribers.
MPIFCMRP	The routine creates a change of CMOR that is a PUSH to give up being the CMOR, giving it to another site automatically.
MPIFDEL	This routine is used to create a message to send to the MPI to inactive the ICN for an individual patient. The site making the request must be the CMOR and there must be no other known treating facilities. This option

Routine Name	Description
	should be used cautiously and to remove any test patients that were accidentally sent to the MPI.
MPIFEDIT	This routines is used to request changing the CMOR to your site and puts the request into the MPI/PD Event Queue.
MPIFHL7	This routine processes inbound CMOR messages.
MPIFMER	This routine has two parts as follows: 1. Builds MERGE ICN messages to be sent to the MPI and any sites that subscribe when an ICN is changed to a new value from a previous one. 2. Processes Merge ICN messages received from another site. NOTE: Currently not being utilized.
MPIFNEW	This routine adds a new request for change of CMOR to File #984.9.
MPIFNQ	Functions for use by CMOR routines. Line tag PAT returns the CMOR for the specified patient's IEN. Line tag ICN returns ICN for specified patient IEN. Line tag IEN returns patient IEN for the specified ICN. Line tag AUTO sets the CMOR REQUEST CHANGE field in the CIRN SITE PARAMETER file (#991.8) to Automatic. Line tag RPT1 prints a list of your sent requests for change of CMOR that are outstanding. Line tag RPT2 prints a list of all requests for change of CMOR that have been received and not processed at this site. Line tag RPT3 prints all approved requests on or since a user entered date. Line tag RPT4 prints all disapproved requests on or since a user entered date. Line tag INQ allows user to view a specified request.
MPIFPST	Post-Init for the Master Patient Index build. This routine checks to see if the MPI institution has been established and prints a message if it is not, updates the mail group field in File #991.8, updates the mail group field for a number of entries in the CIRN EXCEPTION TYPE file (#991.11) and populates the Facility Name field in the HL7 APPLICATION PARAMETER file (#771) for all the MPIF entries.
MPIFQ0	This routine is used for the individual patient initialization to the MPI. One patient is selected to be loaded to the MPI in real-time.
MPIFQ1	This routine is used for the real-time direct connect during the PIMS options.
MPIFQED	This routine is used to update particular fields returned from the MPI during the direct connect.
MPIFQUE3 (Requesting CMOR site)	This routine was used during the initial seeding process to automatically change the CMOR to another site based upon CMOR Activity Score. This routine is not currently utilized.
MPIFQUE4 (Receiving CMOR site)	Once the HL7 batch message has arrived at the target CMOR site, the HL7 Filer will call this processing routine. The message is then put into a background job to run. Once TaskMan calls this background job, this processing routine loops through the HL7 batch message and parses out the individual content messages to get the required patient data (i.e., ICN, CMOR score, calculation date, requesting site, requestor name, and the reason for the request).

Routine Name	Description
	After the target CMOR site obtains all the comparison-specific information from the requesting (incoming) HL7 message, this routine finds the local patient record that matches the ICN of the requesting patient record. Next, it obtains the local score calculation date and the CMOR score from this patient record. If the current score calculation date in the target system is fewer than 89 days from today's date, then the current CMOR score will be used to perform the comparison. Otherwise, a new score is calculated for that patient during the processing of the message. If the requesting (incoming) CMOR score is less than the present CMOR score for this patient record in the target system, nothing will change. If the requesting CMOR score is more than 80% greater than the current (local) CMOR score, then the current CMOR for this patient record will be changed to the requesting (incoming) CMOR. An ADT~A31 HL7 message (not a batch message) is then generated to update the Subscription Control list and the MPI system in Austin showing that the CMOR for this patient record has been changed.
MPIFQUE5 (Subscriber CMOR site)	This routine processes the notification HL7 message that approves the change to the CMOR number. This will update the matching patient record in the receiving system with the new CMOR.
MPIFREQ	This routine processes the CMOR Request from the MPI/PD Event Queue, creating the HL7 message for the Change CMOR Request.
MPIFRES	This routine sends batch messages containing at most 100 patients to the MPI to have an ICN assigned. These are patients that received a Local ICN (MPI was unavailable to assign one in real time) or for patients that were added to the PATIENT file (#2) after the initialization using means other than the PIMS options: • Register a Patient, • 10-10T Registration, • Load/Edit Patient Data, or • Electronic 10-10EZ Processing. Local ICNs will only be sent to the MPI once for resolution. If they aren't resolved the first time, it is most likely because an exception has been generated requiring manual processing.
MPIFRESS	This routine processes the approve/disapprove message from the site the CMOR Request was sent to.
MPIFREV	This routine processes the request, bringing the request up for the user to process (approve/disapprove)
MPIFRTC	This routine is used during the real-time connection with the MPI to send an HL7 message to add a patient to the MPI.

Routine Name	Description
MPIFSAQ	This routine allows a user to query the MPI for any know information. The patient can be in the PATIENT file (#2), but doesn't have to be. If the patient is not part of the PATIENT file (#2), the user will be prompted for Name, SSN and DOB (all required). A query is sent to the MPI (in real time) and all known information is returned. If the MPI does not find an exact match, all potential matches are returned and displayed to the user. No updating to the patient data can take place. This is a display option only.
MPIFSPC	This routine computes the checksum for a given ICN.
MPIFUTL	This routine is made up of several APIs. Line tag TYPE allows for updating of CIRN SITE PARAMETER file (#991.8). Line tag MAIL returns the mail group for new requests. Line tag CHK1 checks as to whether or not a new Request for Change CMOR can be created.
MPIFVTQ	This routine builds the RDF segment for a VTQ query to the MPI.

Figure 6: Routines and descriptions in the MPIF namespace

File List

Files and Globals

This section lists all the MPI files with their file numbers, shows their global location, and gives a file description.

984.1 MASTER PATIENT INDEX (LOCAL NUMBERS) ^MPIF(984.1,
Data Comes with File: Yes

This file is to be used to generate local ICNs when the MPI is down (unreachable).

984.5 MPI CHECKDIGIT ^MPIF(984.5,
Data Comes with File: Yes

This file is used to calculate the check digit (check sum) for an ICN.

984.8 MPI ICN BUILD MANAGEMENT ^MPIF(984.8,
Data Comes with File: Yes

This file is used to track the MPI Initialization process. It is utilized when stopping and restarting the initialization process.

984.9, MPIF CMOR REQUEST ^MPIF(984.9,
Data Comes with File: No

This file holds all requests for change of a patient's Coordinating Master of Record. Requests being sent to remote locations and received from remote locations are stored in this file and updated as new requests are received.

Files and Globals (Used by MPI, but Not Exported with MPI)

The following files are not exported in the MPI package, but are used by the MPI software.

991.8 CIRN SITE PARAMETER ^RGSITE(991.8,
Data Comes with File: No

This file stores generic site parameters for the MPI/PD package. Only one entry (entry number 1) should exist in this file for MPI/PD. MPI **V*IST*A**, however, utilizes eight fields in it. They are listed below by field number, field name, and brief description:

Field #	Field Name	Description
991.8,.02	CMOR REQUEST CHANGE	'0' FOR MANUAL; '1' FOR AUTOMATIC; Based on this field setting, any CMOR change request received from another station can be manually either reviewed or automatically approved.
991.8,.03	NEW REQUEST MAILGROUP	If the CMOR Request Change field (#991.8,.02) is set to manual, any new CMOR change requests received will notify the mail group entered in this field. This provides a means for prompting someone to review the new request.
991.8,30	CMOR COMP LAST PATIENT	This was the last patient processed in the CMOR comparison process.
991.8,31	CMOR COMP STARTED DATE/TIME	This is the date/time the CMOR comparison process began.
991.8,32	CMOR COMP STOPPED DATE/TIME	When the CMOR comparison has stopped, (either automatically or manually) the time is recorded in this field.
991.8,33	CMOR COMP STATUS	This is the status of the CMOR comparison process in your system.
991.8,34	CMOR COMP LAST TASK #	This is the last task number that the CMOR comparison ran on.
991.8,35	CMOR COMP FLAG	This flag allows the user to stop the CMOR comparison process.

Figure 7: CIRN SITE PARAMETER file (#991.8)

The Master Patient Index build exports the input template MPIF SITE PARAMETERS for this file [CIRN SITE PARAMETER file (#991.8)]. The template allows MPI to update the fields: CMOR Request Change and New Requests Mail Group.

(For more information about the CIRN SITE PARAMETER file (#991.8) see the "File List" section of this manual.)

995 CIRN EVENT ASSOCIATION ^RGEQASN(,
Data Comes with File: Yes

This file holds definitions of MPI/PD events that occur. When an event occurs, an entry is placed into the MPI/PD EVENT QUEUE and the corresponding HL7 message is sent. The CIRN EVENT ASSOCIATION file entry determines how the event is processed, such as the routine to call to process event and related HL7 Protocol.

DBIA #2792 allows the Master Patient Index to add two new entries to this file [i.e., the CIRN EVENT ASSOCIATION file (#995)]. Those entries are MPIF CMOR RESULT and MPIF CMOR REQUEST. DBIA #2792 also allows these entries to be utilized via the API call EN^RGEQ.

991.1 CIRN HL7 EXCEPTION LOG ^RGHL7(991.1,
Data Comes with File: Yes

This file is used for tracking MPI/PD HL7 exception information. It holds the MPI/PD HL7 exception types. It is pointed to by the TYPE field (#2) for the EXCEPTION subfield (#991.12) of the CIRN HL7 EXCEPTION LOG file (#991.1). It contains exception messages logged during the generation of outbound messages and the processing of inbound messages. Some fields apply only for entries logged by message generation routines, others only to message processing routines, and others to both.

This file should not be edited directly. Instead, use the exception management utilities to manage entries in this file.

Templates

Following is a list of the VA FileMan templates exported with the MPI package. A brief description for each along with the file name and number that each are located in (if applicable).

List Template

MPIF REAL-TIME QUERY
File: LIST TEMPLATE file (#409.61)
Used to create the List Manager screen when utilizing the "direct connect" to the MPI at the Austin Automation Center. A list of potential matches is returned.

Print Templates

MPIF OUTSTANDING REQUESTS
File: MPIF CMOR REQUEST (#984.9)
Allows user to display Pending Approval CMOR Requests.

MPIF REQUEST VIEW
File: MPIF CMOR REQUEST (#984.9)
Allows user to display a single CMOR Request.

Sort Templates

MPIF PENDING REQUESTS
File: MPIF CMOR REQUEST (#984.9)
Sort CMOR requests with STATUS of pending approval, then within that sort by SITE not equal to null.

MPIF REQUEST SORT
File: MPIF CMOR REQUEST (#984.9)
Sort by SITE number not equal to null, then within that sort by the CMOR request STATUS and chronological order by ENTER DATE.

Input Templates

MPIF OPEN REQUEST
File: MPIF CMOR REQUEST (#984.9)
Gives the user edit access to enter a new record in File #984.9 for CMOR requests.

MPIF REQUEST INCOMING
File: MPIF CMOR REQUEST (#984.9)
Allows user to display the CMOR request.

MPIF RESULT INCOMING
File: MPIF CMOR REQUEST (#984.9)
Allows user to approve/disapprove the CMOR request.

MPIF REVIEW AUTO
File: MPIF CMOR REQUEST (#984.9)
Automatically approve the CMOR request.

MPIF REVIEW RESET
File: MPIF CMOR REQUEST (#984.9)
Reverse the approval process. If the user has not completed the approval process the new data won't be saved. (e.g., through an up-arrow or time out).

MPIF REVIEW RESULT
File: MPIF CMOR REQUEST (#984.9)
Automatically saves the approval data to the CMOR request once the user approves request.

MPIF SITE PARAMETERS
File: CIRN SITE PARAMETER (#991.8)
Allow automatic processing of CMOR request.

Exported Options

This section describes in detail the menus and options comprising the Master Patient Index (MPI) **V*IST*A**. They should be made accessible to authorized IRM, ADPAC (i.e., most likely PIMS ADPACs and/or Coordinators, etc.), and VAMC personnel who will be involved in working with the MPI **V*IST*A**.

Note: Patch RG*1*19 made extensive menu changes including the removal of obsolete menus and options, moved some options to different menus, added new options, and changed user visible references from CIRN to MPI/PD except in file names and most field names where it appears. CIRN Master of Record (CMOR) is now Coordinating Master of Record.

MPI Exported Menus and Options

MPI **V*IST*A** menus and options are installed with the MPI/PD package. For this reason, they are shown below in context within the MPI/PD menu. MPI specific menus and options are highlighted in boldface.

```
CORD MPI/PD Patient Admin Coordinator Menu
    SP   Site Parameters Edit for CMOR
    CMOR CMOR User Menu ...
         IND Calculate Individual Patient CMOR Score
         DRS Duplicate Record by CMOR Score
         STAT Duplicate Record Statistics
    ADU  MPI/PD Patient Admin User Menu ...
         Patient Data Review
         Coordinating Master of Record (CMOR) Request ...
                Create a New CMOR Change Request
                Push CMOR Request
                Edit Open CMOR Change Request
                Review Pending Change of CMOR Requests
                Batch Review of CMOR Change Requests
                Display a CMOR Change Request
            PEND Report - Pending Received Requests
            SENT Report - Sent Requests Still Pending
            DIS  Report - CMOR Request Disapproved
            APP  Report - CMOR Requests Approved
            LOG  Patient Audit Log Reports ...
         Custom Audit File Print
         Single Patient Audit File Print
    MPI  Master Patient Index Menu ...
         Single Patient Initialization to MPI
         Display Only Query
         Inactivate Patient from MPI
    MSG  Message Exception Menu ...
         View Potential Match Patient
         MPI/PD Exception Handling
         Patient MPI/PD Data Inquiry
    RPT  Management Reports ...
         Pseudo-SSN Report
         Treating Facility List Statistics
         MPI/PD Status Display
```

Figure 8: MPI **V*IST*A** menus and options located on MPI/PD Patient Admin Coordinator Menu

There is only one MPI option named PATIENT file (#2) Initialization to MPI on the MPI/PD IRM Menu. It is shown in Figure 9, highlighted in boldface.

```
IRM MPI/PD IRM Menu ...
    EQ    MPI/PD Event Queue Manager ...
          Start MPI/PD Event Queue
          Halt MPI/PD Event Queue
          Coordinating Master of Record (CMOR) Score Menu ...
             BGN  Start/Restart CMOR Score Calculation
             HLT  Stop CMOR Score Calculation
             IND  Calculate Individual Patient CMOR Score
             CSS  CMOR Score Calculation Status
             DRS  Duplicate Record by CMOR Score
             STAT Duplicate Record Statistics
          Patient File Initialization to MPI
    SD MPI/PD Status Display
```

Figure 9: MPI **V*IST*A** menus and options located on MPI/PD IRM Menu

Figure 10 shows the Local/Missing ICN Resolution background job. This is a stand-alone MPI option that should be scheduled to run via TaskMan.

```
Local/Missing ICN Resolution Background Job        [MPIF LOC/MIS ICN RES]
```

Figure 10: MPI **V*IST*A** stand-alone option Local/Missing ICN Resolution Background Job

MPI V*IST*A Menu and Option Descriptions

The following pages provide a detailed description of the menus and options that comprise the Master Patient Index (MPI) **V*IST*A**. They are listed in order by menu text and option name as they appear in the MPI/PD menu structures as shown on the previous pages.

Site Parameters Edit for CMOR MPIF SITE PARAMETER

This option allows editing of site parameters that affect the processing of CMOR requests. These parameters allow incoming CMOR requests to be processed manually or automatically and define a mail group for messages to alert you when a new request is received. If you choose to have the messages processed automatically, you will not receive notification that a request has been received or processed.

```
Select MPI/PD Patient Admin Coordinator Menu Option: Site Parameters Edit
for CMOR
Type of Processing: MANUAL// <RET>
New Request Mailgroup: MPIF CMOR REQUEST / <RET>
```

Figure 11: MPI **V*IST*A** option – Site Parameters Edit for CMOR

Coordinating Master of Record (CMOR) Request MPIF CMOR MGR

The Coordinating Master of Record (CMOR) Request menu is part of the MPI application and resides in MPI/PD. Its purpose is to give sites the tools needed to request and approve changes to a patient's CMOR.

The Coordinating Master of Record (CMOR) is the designated "owner" of the patient's descriptive and plays a major role in the distribution of it. A patient will have only one CMOR at a time. Typically, the CMOR for a particular patient should be that site where the patient has the most activity/receives the most care. The designation as the CMOR for a patient does not provide "workload credit" or any other distinction.

A patient's CMOR may change for many reasons: the patient moved to a new location, VISN organization of services, changes in the patient's care needs, etc. The CMOR should move with the patient when there is change in the site where the patient will be receiving care for an extended period of time i.e.,(specialized care, seasonal migration, etc). A comparison of CMOR scores can be used as an indication of the appropriate CMOR, however, it should not override such indications as patient request or future appointments. A request to change a patient's CMOR may be initiated by either the patient's new care site or the patient's current CMOR. Changing the CMOR requires agreement between the two sites involved.

```
Select MPI/PD Patient Admin Coordinator Menu Option: ADU <RET> MPI/PD
Patient Admin User Menu

  Coordinating Master of Record (CMOR) Request ...
          Create a New CMOR Change Request
          Push CMOR Request
          Edit Open CMOR Change Request
          Review Pending Change of CMOR Requests
          Batch Review of CMOR Change Requests
          Display a CMOR Change Request
      PEND Report - Pending Received Requests
      SENT Report - Sent Requests Still Pending
      DIS  Report - CMOR Request Disapproved
      APP  Report - CMOR Requests Approved

Select Coordinating Master of Record (CMOR) Request Option:
```

Figure 12: MPI **V*IST*A** menu – Coordinating Master of Record (CMOR) Request

Create a New CMOR Change Request — MPIF NEW REQUEST

The Create a New CMOR Change Request option allows a non-CMOR site to request that it become the CMOR for a patient.

```
Select Coordinating Master of Record (CMOR) Request Option: Create a
New CMOR Change Request <RET>
Select PATIENT: CAMEHERE,CHARLES  <RET>  CAMEHERE,CHARLES 3-3-52
444444444
  NO COLLATERAL
REQUEST NUMBER:553-6
*** Current CMOR: BPMARION (998) ***
Reason for Request: moved
Requestor's Name:: MAKER,MERRY//    MM       COMPUTER SPECIALIST
Requestor Phone:: // 555-555-5555
Select Request Action (SEND/EDIT/DELETE)? SEND// <RET>
... Request will be sent
```

Figure 13: MPI V*IST*A option – Create a New CMOR Change Request

- Your site must already be one of the treating facilities for the patient in order to become the CMOR.
- Enter reason/justification/comment for transfer.
- A request containing Patient ID, person requesting change, person's phone #, date/time stamp, requesting site, patient, justification/comments is sent to the current CMOR.
- The CMOR has 14 days in which to respond to the request. After 14 days, the change will be automatic.

Push CMOR Request — MPIF PUSH CMOR

This Push CMOR Request option allows the CMOR site to transfer a patient's CMOR (i.e., to "push" the CMOR) to another site. The site doesn't have to approve the request, it will happen automatically. The site where the CMOR is being transferred to must be in the treating facility list for this patient.

```
Select Coordinating Master of Record (CMOR) Request Option: Push CMOR
Request
Select PATIENT: LEFTHERE,LAURENCE
REQUEST NUMBER:553-7
Reason for Request: moved
Requestor's Name:: MAKER,MERRY// <RET>   MM      MAS ADPAC
Requestor's Phone:: 555-555-5555// <RET>
Select Site to Be CMOR: Albany NY VAMC 500 INACTIVE Jul 01, 2000
Select Request Action (SEND/EDIT/DELETE)? SEND// <RET>.. Request Sent
```

Figure 14: MPI V*IST*A option – Push CMOR Request

Edit Open CMOR Change Request **MPIF EDIT REQUEST**

If the New CMOR Change Request option is interrupted abnormally (your computer connection fails) prior to sending the request, the request has a status of open and can be edited and sent using this option. Once you have sent the request, it cannot be edited.

The option Edit Open CMOR Change Request allows you to edit a CMOR change request with an Open status.

Note: A status of Open indicates that a computer connection failure has prevented the user from completing the CMOR change request and stopped the software from deleting the incomplete CMOR change request.

Review Pending Change of CMOR Requests **MPIF REVIEW REQUEST**

Use the Review Pending Change of CMOR Requests or the Batch Review of CMOR Change Requests options to review requests from other sites and approve or disapprove them. You may process CMOR change requests by site or by patient. If by site, all requests for the site are shown by patient. If processing by patient, it will list all requests for a given patient. The CMOR has 14 days in which to respond to a CMOR Change Request. After that, the change will be automatic.

Disapproved request - Marks the request in the CMOR's outstanding request file as rejected and notifies the original requester of the disapproval.

Approved request - Updates CMOR field to new CMOR. If you are the new CMOR look for the request in your outstanding request file and mark it complete. If you are the relinquishing CMOR, check the outstanding request file and mark the request processed.

```
Select Coordinating Master of Record (CMOR) Request Option: Review
Pending Change of CMOR Requests
Select CMOR request to review: 553-10   10-02-01   CAMEHERE,CHARLES

OCT 2,2001            View of CMOR Request {RECEIVED}           553-10
------------------------------------------------------------------------
 Requested by: MAKER,MERRY                   Date: OCT 2,2001
  Phone (req): 555-555-5555
      Patient: CAMEHERE,CHARLES (4444)       Type: REQUEST RECEIVED FROM
       Status: PENDING APPROVAL                    DETROIT (553)
  Reviewed by: Date:
  Phone (rev):
------------------------------------------------------------------------
Requestor Comments:
  Moved here

Reviewer Comments:
  Happy to oblige.

Select Review Action (APPROVE/DISAPPROVE, OR '^' to Exit)? a APPROVE
REVIEWER PHONE NUMBER: 555-555-5556
REVIEWER COMMENTS: <RET>

Processing.....

... Done!
```

Figure 15: MPI **V*IST*A** option – Review Pending Change of CMOR Requests

Batch Review of CMOR Change Requests **MPIF BATCH REVIEW**

The Batch Review of CMOR Change Requests option is used to process pending CMOR requests by station, rather than having to enter individual CMOR request numbers.

```
Select Coordinating Master of Record (CMOR) Request Option: Batch Review
of CMOR Change Requests
Do you want to approve by SITE? n  <RET>  NO

OCT 2,2001            View of CMOR Request {RECEIVED}            553-10
------------------------------------------------------------------------
 Requested by: MAKER,MAKER                    Date: OCT 2,2001
  Phone (req): 555-555-5555
      Patient: CAMEHERE,CHARLES (4444)        Type: REQUEST RECEIVED FROM
Status: PENDING APPROVAL                            DETROIT (553)
Reviewed by:                                 Date:
Phone (rev):
------------------------------------------------------------------------
Requestor Comments:
  Moved here

Reviewer Comments:
  Happy to oblige.

Select Review Action (APPROVE/DISAPPROVE, OR '^' to Exit)? a APPROVE
REVIEWER PHONE NUMBER: 555-555-5556
REVIEWER COMMENTS: Happy to oblige.

Processing.....

... Done!
```

Figure 16: MPI **V*IST*A** option – Batch Review of CMOR Change Requests

Display a CMOR Change Request **MPIF VIEW REQUEST**

Use the Display a CMOR Change Request option to view all information for a particular CMOR request without approving or disapproving it.

```
Select Coordinating Master of Record (CMOR) Request Option: DISPlay a
CMOR Change Request
Select Request #: 553-6  <RET>  09-27-01          CAMEHERE,CHARLES
DEVICE: <RET> UCX/TELNET     Right Margin: 80// <RET>
SEP 27,2001            View of CMOR Request {SENT}              553-6
------------------------------------------------------------------------
Requested by: MAKER,MERRY                          Date: SEP 27,2001
  Phone (req): 555-555-5555
      Patient: CAMEHERE,CHARLES (6778)             Type: REQUEST SENT TO
       Status: REQUESTED                                 BPMARION (998)
  Reviewed by:                                     Date:
  Phone (rev):
------------------------------------------------------------------------
Requestor Comments:
  moved
Reviewer Comments:
```

Figure 17: MPI **V*IST*A** option – Display a CMOR Change Request

Report - Pending Received Requests **MPIF RECEIVED REQUESTS**

The Report - Pending Received Requests option provides a list of all outstanding CMOR requests that need to be reviewed and processed. Once you have approved or disapproved a request it will not appear on this report.

```
Select Coordinating Master of Record (CMOR) Request Option: pend Report -
Pending Received Requests
DEVICE: <RET> UCX/TELNET      Right Margin: 80// <RET>
Pending CMOR Requests                  OCT 2,2001 12:14     PAGE 1
Request                                                     Date
Number         Requested By           Patient           Requested
------------------------------------------------------------------------

              Request From: DETROIT
553-10         MAKER,MERRY         CAMEHERE,CHARLES (4444) OCT 2,2001
Reason:  moved here
```

Figure 18: MPI **V*IST*A** option – Report - Pending Received Requests

Report - Sent Requests Still Pending **MPIF SENT REQUESTS**

The Report - Sent Requests Still Pending option provides a list of all CMOR requests entered that are still outstanding (requests you have made but have not received a response on). The report sorts by station number and date requested.

```
Select Coordinating Master of Record (CMOR) Request Option: SENT Report -
Sent Requests Still Pending
```

```
Do you only want to list your requests? YES// n <RET>  NO
Display requests entered on or before date: T-2// <RET> (SEP 27,2001)
DEVICE: <RET>   UCX/TELNET    Right Margin: 80// <RET>
Pending CMOR Requests                    SEP 27,2001    16:44    PAGE 1
Request                                                      Date
Number      Requested By           Patient                   Requested
------------------------------------------------------------------------

        STATION: ALBANY TESTING (501A)
500-3        TESTER,TOMMY         MAIDEN,MARY               SEP 24,2001
   Reason: Patient request
        STATION: ALBANY, NY (500)
500-21       CHECKER,CHARLES      PRATTLE,PETER (0101)      SEP 3,2001
   Reason: moving
        STATION: ALTOONA, PA (503)
500-22       ADPAC,ARTHUR         AGILE,ANDREW (5555)       SEP 6,2001
   Reason: TEST
        STATION: ANN ARBOR (506)
500-28       DEVELOPER,DREW       ROADS,ROCKY (5678)        SEP 8,2001
   Reason: Patient request
        STATION: BAY PINES, FL (516)
500-27       SUPPORT,SALLY        LUCKY,LUCY (2345)         AUG 25,2001
   Reason: CHANGE OF ADDRESS
        STATION: DETROIT, MI (553)
500-5        MASCLERK,MARGARET    TIMID,TIMOTHY (2222)      SEP 28,2001
   Reason: Patient request
```

Figure 19: MPI **V*IST*A** option – Report - Sent Requests Still Pending

Report - CMOR Requests Disapproved **MPIF DISAPPROVE REPORT**

This report prints the CMOR requests that have a disapproved status starting with the date selected by the user.

```
Select Coordinating Master of Record (CMOR) Request Option: Dis Report -
CMOR Request Disapproved
Display requests DISAPPROVED on or SINCE (date): T-10// <RET> (SEP 27,
2000)
DEVICE: <RET>  UCX/TELNET    Right Margin: 80// <RET>
MPIF CMOR REQUEST LIST              SEP 27,2001     16:46      PAGE 1
                                  DATE
STATUS         REQUEST NUMBER     REVIEWED
  PATIENT                       SITE
                                                              DATE
  REASON FOR REQUEST                                          REQUESTED
  REVIEWER COMMENTS
------------------------------------------------------------------------

DISAPPROVED    500-4              SEP 24,2001
  ROAMING,ROGER TF1            ALBANY
  T18 AUTO DISAPPROVE                                         SEP 24,2001
  Multiple Request to Change CMOR, Other Request received 1st
DISAPPROVED    553-4              SEP 24,2001
  ROAMING,ROGER TF1            BPSAGINAW
  T18 AUTO DISAPPROVE 1 OF 2                                  SEP 24,2001
  Multiple Request to Change CMOR, Other Request received 1st
```

Figure 20: MPI **V*IST*A** option – Report - CMOR Requests Disapproved

Report - CMOR Requests Approved **MPIF APPROVED REPORT**

The Report - CMOR Requests Approved option prints the CMOR requests that have an approved status starting with the date selected by the user.

```
Select Coordinating Master of Record (CMOR) Request Option: app Report -
CMOR Requests Approved
Display requests APPROVED on or SINCE (date): T-10// T-366 <RET> (SEP 26, 2000)
DEVICE: <RET>  UCX/TELNET    Right Margin: 80// <RET>
MPIF CMOR REQUEST LIST              SEP 27,2001 16:47        PAGE 1
                                  DATE
STATUS         REQUEST NUMBER     REVIEWED
  PATIENT                       SITE
                                                              DATE
  REASON FOR REQUEST                                        REQUESTED
------------------------------------------------------------------------

APPROVED       553-1              SEP 24,2001
  SETTLED,SAMUEL TF1           BPSAGINAW
  T18 1 OF 2                                                SEP 24,2001
APPROVED       999-5              SEP 24,2001
  HOPPING,HARRY TF1            BPSAGINAW
  T18 1 0F 2                                                SEP 24,2001
APPROVED       553-5              SEP 25,2001
  WOODSMAN,WILLIAM TF1         ALBANY
  CHECKING HL7 PURGE                                        SEP 25,2001
```

Figure 21: MPI **V*IST*A** option – Report - CMOR Requests Approved

Patient File Initialization to MPI MPIFINIT DPT TO MPI

Use the Patient File Initialization to MPI option to initialize active patient records in the site's PATIENT file (#2) against the Master Patient Index. Patient records not found are added to the MPI. Information from the MPI is returned for patient records having a match on the MPI.

```
Select OPTION NAME: MPI/PD IRM MENU

   EQ     MPI/PD Event Queue Manager ...
          Coordinating Master of Record (CMOR) Score Menu ...
          Patient File Initialization to MPI
   SD     MPI/PD Status Display

Select MPI/PD IRM Menu Option:
```

Figure 22: MPI **V*IST*A** option – Patient File (#2) Initialization to MPI

Master Patient Index Menu MPIF VISTA MENU

This is the primary menu for updating and viewing entries on the Master Patient Index. The Master Patient Index menu belongs to the Master Patient Index **V*IST*A** application and resides on the MPI/PD Patient Admin Coordinator Menu.

```
Select MPI/PD Patient Admin Coordinator Menu Option: MPI Master Patient
Index Menu

          Single Patient Initialization to MPI
          Display Only Query
          Inactivate Patient from MPI

Select Master Patient Index Menu Option:
```

Figure 23: MPI **V*IST*A** – Master Patient Index Menu

Single Patient Initialization to MPI **MPIF IND MPI LOAD**

- The Single Patient Initialization to MPI option establishes the TCP/IP direct connection with the MPI. It is used during daily operations to initialize an already existing patient with an ICN and CMOR to the MPI.
- This is the recommended option to get ICN assignments for patients who could not have an ICN assigned without user interaction (e.g., during the initialization or Local/Missing ICN resolution jobs).
- If multiple patient entries are found on the MPI that closely match a patient's identifying information, the user is presented with a list of patients from which they can choose the correct entry to add to the MPI. The user also has the option to quit and not do anything to get an ICN assigned. In this case, a local ICN is assigned if one doesn't already exist.

The next three figures demonstrate the results from querying the MPI using the Single Patient Initialization to MPI option given the following scenarios:

- Patient is not found on MPI.
- Patient is found on MPI – exact match.
- Potential matches found on MPI.

Patient Not found on MPI

```
Select OPTION NAME: MPIF VISTA MENU <RET> Master Patient Index Menu

          Single Patient Initialization to MPI
          Display Only Query
          Inactivate Patient from MPI

Select Master Patient Index Menu Option: SINGle Patient Initialization to
MPI
Select PATIENT NAME: `381  TESTING,AGAIN AGAIN P        0-0-52
167000052P     NO     SC VETERAN

Attempting to connect to the Master Patient Index in Austin...
If no SSN or inexact DOB or common name, this request
may take some time, please be patient...

Patient was not found in the MPI...

Adding Patient to Master Patient Index...
```

Figure 24: MPI **V*IST*A** option – Single Patient Initialization to MPI – Patient Not found on MPI

Patient Found – Exact Match

```
Select OPTION NAME: MPIF VISTA MENU     Master Patient Index Menu

          Single Patient Initialization to MPI
          Display Only Query
          Inactivate Patient from MPI

Select Master Patient Index Menu Option: SINGle Patient Initialization to
MPI
Select PATIENT NAME: `381  TESTING,AGAIN AGAIN P        0-0-52
167000052P     NO     SC VETERAN

Attempting to connect to the Master Patient Index in Austin...
If no SSN or inexact DOB or common name, this request
may take some time, please be patient...

Found Patient TESTING,AGAIN AGAIN P in MPI, updating ICN and CMOR..."
```

Figure 25: MPI **V*IST*A** option – Single Patient Initialization to MPI – Patient Found. Exact Match

Potential Matches Found

```
Select OPTION NAME: MPIF VISTA MENU     Master Patient Index Menu

          Single Patient Initialization to MPI
          Display Only Query
          Inactivate Patient from MPI

Select Master Patient Index Menu Option: SINGle Patient Initialization to
MPI
Select PATIENT NAME: `381  TESTING,AGAIN AGAIN P        0-0-52
167000052P     NO     SC VETERAN

Attempting to connect to the Master Patient Index in Austin...
If no SSN or inexact DOB or common name, this request
may take some time, please be patient...

MPI QUERY RESULTS           Sep 10, 2001@10:18:53         Page: 1 of 1
 Possible MPI Matches for Patient: TESTING,AGAIN AGAIN P
                               SSN: 167000052P
                               DOB: 00-00-1952

     Patient          SSN        DOB        Coordinating Master Record
1   TESTING,AGAIN           777665555  00-00-1952   ALBANY


          Enter ?? for more actions
ADD Add Patient to MPI                 SP  Select a Patient from List
HE  HELP
Select Action:Quit//
```

Figure 26: MPI **V*IST*A** option – Single Patient Initialization to MPI – Potential Matches Found

Looking at Figure 26, if you select Add Patent to MPI (the action ADD), the patient listed at the top of the screen is added to the MPI. Essentially what the user is saying is that the list does not contain this patient.

If the user is presented with a list where more than one entry is the patient you want to match with, you must:

1. Select the action QUIT..
2. Send an e-mail message to the MPIF EXCEPTIONS mail group with a capture of the List Manager screen or log a NOIS with the National Help Desk.

This will help to facilitate this potential duplicate on the MPI getting resolved.

Selecting the action SP (Select a Patient from List) allows the user to select a patient from the list. The ICN and CMOR will be updated at the local site and these sites will now be sharing demographic information.

If QUIT is selected, the ICN and CMOR fields will remain as is.

Display Only Query **MPIF DISPLAY ONLY QUERY TO MPI**

The Display Only Query option is used by hospital, ADPAC, and IRM personnel to query the MPI in Austin for all known data about a patient. However, the patient may or may not be currently in the PATIENT file (#2):

- The MPI may return the message: "Patient Not Known at the MPI".
- The MPI may return a list of potential matches, along with all known data for each patient.
- The MPI may return an exact match along with all known data for that patient.

Figure 27 shows that the data viewed by the Display Only Query option is for display purposes only.

```
Select Master Patient Index Menu Option: DISplay Only Query
Is Patient in the PATIENT file? ? YES// <RET>
Patient Name: VETERAN,JANE Q  <RET>  01-01-11 111111111 NO
 NON-VETERAN (OTHER)

Attempting to connect to the Master Patient Index in Austin...

Found One Match

Name: VETERAN,JANE Q
SSN: 111111111          Gender: F
Integration Control Number (ICN): 1000111111
Date of Birth: 01-01-1911 Date of Death:
CMOR: BAY PINES
```

Figure 27: MPI **V*IST*A** option – Display Only Query – Patient in PATIENT file (#2)

If you answer, "NO" to the prompt "Is Patient in the Patient file?", shown in Figure 28, you will also be asked for the patient's name, date of birth and SSN.

```
Select Master Patient Index Menu Option: Display Only Query
Is Patient in the PATIENT file? ? YES// n  <RET>  NO
PATIENT NAME (last,first middle): VETERAN,JANE Q
Date of Birth: 1-01-11 (JAN 1, 1911)
9 Digit SSN (No Dashes): 111111111    <<Not required

Attempting to connect to the Master Patient Index in Austin...

Found One Match

Name: VETERAN,JANE Q
SSN: 111111111           Gender: F
Integration Control Number (ICN): 1000111111
Date of Birth: 01-01-1911 Date of Death:
CMOR: BAY PINES
```

Figure 28: MPI **V*IST*A** option – Display Only Query – Patient *not* in PATIENT file (#2)

Inactivate Patient from MPI	**MPIF PAT INACT**

- The Inactivate Patient from MPI option is used to inactive the ICN for an individual patient on the MPI.
- The site making the request must be the CMOR and the patient must not have any other known treating facilities.

Note: This option must be used with caution. It can be used to remove "test patients" that went to the MPI at the Austin Automation Center by mistake or patients that will be part of a merged pair or to remove a duplicate entry on the MPI and match with the "correct" entry on the MPI.

```
Select OPTION NAME: MPIF PAT INACT       Inactivate Patient from MPI
Inactivate Patient from MPI
Select PATIENT NAME: `7  TIMSON,GREG   <RET>   12-30-14    096863444
YES
SC VETERAN
Are you sure you want to Inactivate this Patient?? No// YES
*** Inactivated on YOUR system, message sent to MPI to Inactivate ***
```

Figure 29: MPI **V*IST*A** option – Inactivate Patient from MPI

Local/Missing ICN Resolution Background Job MPIF LOC/MIS ICN RES

The Local/Missing ICN Resolution background job should be scheduled to run via TaskMan once a day, typically after hours when there is less system activity. The Local/Missing ICN Resolution job will find all patients in the local PATIENT file (#2) with a Local ICN or that have been flagged as missing an ICN and send these patients to the MPI for a national ICN assignment. These patients are sent to the MPI requesting an ICN and CMOR, in batch HL7 messages (maximum of 100 patient entries each). Each Local ICN will only be sent to the MPI one time for resolution.

```
Local/Missing ICN Resolution Background Job        [MPIF LOC/MIS ICN RES]
```

Figure 30: MPI **V*IST*A** stand-alone option: Local/Missing ICN Resolution Background Job

Security Keys

There are no security keys exported with the Master Patient Index (MPI) **V*IST*A** package.

Archiving and Purging

Archiving

There are no application-specific archiving procedures or recommendations for the Master Patient Index (MPI) **V*IST*A** package.

Purging

There are no purging instructions for the MPI. However, IRM personnel have the option to use either HL7 or MailMan as the communications protocol for sending to and receiving data from the MPI. Therefore, see the associated product documentation listed below for purging instructions specific to these packages:

- *DHCP Health Level Seven (HL7) Technical Manual*, Version 1.6 and later.
- *VA Electronic Mail System (MailMan) Technical Manual and Systems Management Guide*, Version 7.1 and later.

Callable Routines

This section documents two categories of supported calls as they relate to the Master Patient Index **V*IST*A** package.

1. The first category is titled "Supported APIs". This section lists and describes the callable routines, which are supported for general use in interacting with the MPI.

2. The second category is titled "Supported APIs (DBIA required)". This section lists and describes the MPI **V*IST*A** callable routines, for which you must obtain a DBIA in to use. Also in the second category is the section titled "MPI Direct Connect". You must also obtain a DBIA for adding the MPI direct connect functionality to your **V*IST*A** package.

For a list of the Database Integration Agreements in which MPI is either custodian or subscriber see the section titled External Relations in this manual.

Note: The MPI/PD software (i.e., routines in the MPIF* and RG* namespace) SHOULD NOT reside/run on Legacy systems. Any **V*IST*A** applications utilizing APIs in the MPIF and RG namespace on Legacy systems should check for the existence of these routine(s) before trying to access them.

Supported APIs

This section documents all the supported APIs belonging to the MPI **V*IST*A** package for retrieving information from the MPI node in the PATIENT file (#2) or MPI related information. The following information is provided for each API listed:

1. API name (highlighted in boldface) and description.
2. Required/optional input parameter(s), if applicable.
3. Output parameter(s), if applicable.
4. Associated DBIA.

API and Description	Input Parameter(s)	Output Parameter(s)	DBIA
$$CMOR2^MPIF001(DFN) This API returns the CMOR (Coordinating Master Of Record) Site Name for any given patient.	DFN (i.e., The DFN is the IEN entry of the patient from the PATIENT file [#2].)	CMOR Site Name or -1^error message	2701
$$CMORNAME^MPIF001(CIEN) This API returns the CMOR Site Name for any given Institution IEN.	CIEN (i.e., The CIEN is the IEN entry from the INSTITUTION file [#4].)	CMOR Site Name or -1^error message	2701
$$GETDFN^MPIF001(ICN) This is the supported API for retrieving the	ICN (i.e., Integration Control Number without the checksum or V	PATIENT file (#2) IEN (i.e., IEN of the patient found to have the	2701

API and Description	Input Parameter(s)	Output Parameter(s)	DBIA
IEN from the PATIENT file (#2) for any given ICN passed as the input parameter. The ICN should be passed without the V or its checksum.	separator.)	passed ICN)	
$$GETICN^MPIF001(DFN) This API returns the ICN and ICN checksum for the patient passed.	DFN (i.e., The DFN is the IEN entry of the patient from the PATIENT file [#2].)	ICNVICN CHECKSUM	2701
$$GETVCCI^MPIF001(DFN) This API returns the CMOR Station Number for the patient who was passed.	DFN (i.e., The DFN is the IEN entry of the patient from the PATIENT file [#2].)	Station Number of the CMOR for the given patient.	2701
$$HL7CMOR^MPIF001(DFN,SEP) This API returns the CMORs Station Number and Institution Name for any given patient.	DFN (i.e., The DFN is the IEN entry of the patient from the PATIENT file [#2].) SEP is the delimiter used to separate Station Number and Name. This is not a required field. Default value is ^.	Station Number SEP Institution Name or -1^error message	2701
$$IFLOCAL^MPIF001(DFN) This API is used to check if a patient has a Local ICN.	DFN (i.e., The DFN is the IEN entry of the patient from the PATIENT file [#2].)	0 (zero) or 1 The returned value of 0 (zero) means that: 1. the patient does not exist, 2. the DFN (i.e., The DFN is the IEN entry from the PATIENT file [#2].) is not defined, 3. the MPI node does not exist, or 4. the patient does not have a local ICN. The returned value of 1 means that the patient has a Local ICN.	2701
$$IFVCCI^MPIF001(DFN) This API is used to determine if your site is	DFN (i.e., The DFN is the IEN entry of the patient from the	If the number 1 is returned, your site is the CMOR for the given	2701

API and Description	Input Parameter(s)	Output Parameter(s)	DBIA
the CMOR for the given patient.	PATIENT file [#2].)	patient. If a minus number 1 (–1) is returned, your site is NOT the CMOR for the given patient.	
$$EN2^MPIFAPI() This API creates and returns the next local ICN and ICN Checksum.	None	Local ICN V ICN Checksum	2702
$$MPILINK^MPIFAPI() This API returns the name of the HL7 Logical Link that is used to send messages to the MPI. If you are sending a message to the MPI, this is the call to make to get the name of the link.	none	HL7 Logical Link name	2702
$$MPINODE^MPIFAPI(DFN) This API returns the MPI node for any given patient from the PATIENT file (#2).	DFN (i.e., The DFN is the IEN entry of the patient from the PATIENT file [#2].)	MPI node or -1^error message.	2702
$$SUBNUM^MPIFAPI(DFN) This API returns the Subscription Control Number from the MPI node for any given patient in the PATIENT file (#2).	DFN (i.e., The DFN is the IEN entry of the patient from the PATIENT file [#2].)	Subscription Control Number or -1^error message	2702

Note: For more information on the DBIAs associated with the APIs listed above, see the section titled "External Relations" of this manual.

External Interfaces (HL7 Components)

The MPI package makes extensive use of HL7 messaging to ensure synchronization of patient records among sites. For more information on MPI HL7 messaging, see the *Master Patient Index (MPI) VISTA HL7 Interface Specifications* for complete details on message construction.

Listed below are the HL7 Application Parameters, Hl Lower Level Protocol Parameters, HL7 Protocols, and List Template used by MPI for HL7 messaging.

HL7 Application Parameters

MPIF A29 SERVER
MPIF A30 SERVER
MPIF CMOR CHNG
MPIF CMOR COMP
MPIF CMOR RSLT
MPIF LOC/MIS
MPIF MPI
MPIF-STARTUP

Hl7 Lower Level Protocol Parameters

MPIF RTC PARAMS

HL7 Protocols

MPIF A28 REQUEST
MPIF A28 RESPONSE
MPIF A29
MPIF A29 SERVER
MPIF A30
MPIF A30 SERVER
MPIF CMOR APP/DIS
MPIF CMOR APPROVE/DISAPPROVE
MPIF CMOR COMPARISON CLIENT
MPIF CMOR COMPARISON SERVER
MPIF CMOR REQUEST
MPIF CMOR RESPONSE
MPIF CMOR RESULT CLIENT
MPIF CMOR RESULT SERVER
MPIF ICN-Q02 SERVER
MPIF TEST

Note: The Logical Link for MPI-Austin will be exported with the HL*1.6*39 patch and are for PRODUCTION accounts only.

List Manager Component

List Template

MPIF REAL-TIME QUERY
MPIF REAL-TIME QUERY (ADD PATIENT)
MPIF REAL-TIME QUERY (HELP)
MPIF REAL-TIME QUERY (SELECT PATIENT)
MPIF REAL-TIME QUERY MENU

External Relations

Platform Requirements

The Master Patient Index (MPI) **V*IST*A** package requires a standard **V*IST*A** operating environment in order to function correctly. Check your **V*IST*A** environment for packages and versions installed.

Hardware Requirements

MPI/PD and MPI **V*IST*A** use TCP/IP as the communications protocol for transmitting and receiving patient information. Use existing system tools for fine-tuning your TCP/IP capabilities.

Space Requirements

If using TCP/IP, outgoing messages will consume approximately 10-20 k/message Mb of space in the ^HL globals for 40,000-50,000 active patients. Incoming messages will consume approximately 15-25 MB of space.

If not using TCP/IP, outgoing messages consume approximately 22-25 k/message Mb of space in the ^HL globals for 40,000-50,000 active patients. Incoming messages consume approximately 35-40 MB of space.

Note: These space requirements apply to only when performing the MPI/PD and MPI Pre-implementation phase.

Database Integration Agreements (DBIA)

All the supported DBIAs relating to the MPI **V*IST*A** package can be found on FORUM on the Integration Agreements Menu located on DBA menu.

(For more information on the supported routines belonging to MPI **V*IST*A** DBIAs see the section titled "Callable Routines" and see the description for the CIRN EVENT ASSOCIATION file (#995) in the section titled "File List" in this manual.)

Note: The MPI/PD software (i.e., routines in the MPIF* and RG* namespace) SHOULD NOT reside/run on Legacy systems. Any **V*IST*A** applications utilizing APIs in the MPIF and RG namespace on Legacy systems should check for the existence of these routine(s) before trying to access them.

Internal Relations

All of the Master Patient Index (MPI) **V*IST*A** options can be invoked independently. None require any special setup in order to run successfully.

Namespace

The Master Patient Index (MPI) **V*IST*A** package uses the **MPIF** namespace.

File Numbers

MPI file numbers and globals are listed below:

File #	Global
984.1	^MPIF(984.1,
984.5	^MPIF(984.5,
984.8	^MPIF(984.8,
984.9	^MPIF(984.9,

Package-wide Variables

The Master Patient Index (MPI) **V***IST***A** package contains no package-wide variables.

Software Product Security

Mail Groups

The following mail groups are exported in the MPI package. They are listed by Mail Group name, and a brief description is given:

Mail Group Name	Description
MPIF EXCEPTIONS	If a server address is not populated in the CIRN HL7 EXCEPTIONS TYPE file (#991.11), MAIL GROUP field (#6), MPI exception e-mail messages (problems) that need to be addressed are sent to this mail group. These messages are all technical in nature, involving problems with HL7 messages or conflicts resulting from CMORs or ICNs not found. Any messages sent to the MPIF EXCEPTIONS mail group are automatically sent to the remote mail group G.CIRN EXCEPTION MGT@FORUM.VA.GOV. Normally there isn't anything a site can do to resolve these messages, which is why they are not sent to local members. If necessary, members of this remote mail group will contact site personnel for assistance. Note: The remote member is populated automatically.
MPIF HL7 GROUP	If HL7 messages are automatically sent to the MPI at the Austin Automation Center via the MailMan protocol will this mail group be utilized. This mail group contains the remote member: S.HL V16 SERVER@MPI.ISC-ALBANY.VA.GOV. No other members should be added to this group.
MPIF CMOR REQUEST	Any requests to change the CMOR will be sent to this Mail Group. Requests will then be processed (i.e., accepted/rejected) via the CMOR options. The messages serve as a heads-up that there are CMOR requests to process. **Note:** This Mail Group is added to the MAIL GROUP file (#3.8) during the Post-Init of the installation.

Figure 31: Software Product Security: Mail groups exported in the MPI package

Note: IRM personnel will be required to use MailMan utilities to add members to the following mail groups:

- MPIF CMOR REQUEST
- RG CIRN DEMOGRAPHIC ISSUES (Exported with MPI/PD. However, utilized by MPI.)

PIMS personnel will most likely be the ones processing CMOR Requests and reviewing MPI/PD HL7 Exception Messages addressing data issues. They should be added as members to the RG

CIRN DEMOGRAPHIC ISSUES mail groups. However, anyone participating in this should be added in these mail groups.

Exception Mail Groups: MPIF EXCEPTIONS and RG CIRN DEMOGRAPHIC ISSUES

The mail groups MPIF EXCEPTIONS and RG CIRN DEMOGRAPHIC ISSUES are specifically used to receive MPI/PD HL7 Exception Messages. It is important to distinguish the difference between them.

1. Members of the MPIF EXCEPTIONS mail group are automatically notified of technical type problems (e.g., such as data update failures or problems with HL7 messages causing them not to be processed).

2. The RG CIRN DEMOGRAPHIC ISSUES mail group is exported with MPI/PD. Members of this mail group are automatically notified of problems relating to data, such as:

   - Patients dates of death not being synchronized between your local PATIENT file (#2) and the MPI.
   - Patient entries with missing required field(s) (i.e., Date of Birth or Name) when trying to add them to the MPI.
   - Potential matches were found during the initialization or during the Local/Missing ICN resolution job that need to be resolved manually in order to obtain an ICN.

   It is recommended that PIMS personnel (i.e., ADPACs and/or Coordinators, etc.) be made members of this mail group.

   (For information on MPI/PD HL7 Exception Messages see “Appendix C – Exceptions and Bulletins”, of the "*Master Patient Index (MPI)* **V***IST***A** *User Manual.*)

(For information on assigning members to mail groups, see the VA Electronic Mail System (MailMan) User Manual V. 7.1.)

Remote Systems

The MPI, located at the Austin Automation Center, maintains the actual patient index and a current list of facilities where the patient has been seen in order to enable sharing of patient data among operationally diverse systems. The MPI software that resides on the **V***IST***A** side sends data to the MPI in Austin as well as any other VAMCs where that patient is known. Some patient data fields are transmitted to Austin during the initialization process as a resulting of daily operations at the VAMC.

The initialization process starts at a VAMC. HL7 messages go to the MPI requesting ICNs for all of the patients that have had activity in the past three years. Once this process has been completed, the MPI is kept up-to-date via existing **V***IST***A** options.

Archiving/Purging

Archiving

There are no application-specific archiving procedures or recommendations for the Master Patient Index (MPI) **V*IST*A** package.

Purging

There are no purging instructions for the MPI. However, IRM personnel have the option to use either HL7 or MailMan as the communications protocol for sending to and receiving data from the MPI. Therefore, see the associated product documentation listed below for purging instructions specific to these packages:

- *DHCP Health Level Seven (HL7) Technical Manual*, Version 1.6 and up.
- *VA Electronic Mail System (MailMan) Technical Manual and Systems Management Guide*, Version 7.1 and up.

Interfacing

There are no specialized (not VA produced) products (hardware and/or software) embedded within or required by the Master Patient Index (MPI) **V*IST*A** package.

Electronic Signatures

There are no electronic signatures used in the Master Patient Index (MPI) **V*IST*A** package.

Menus

There are no options of particular interest to Information Security Officers (ISOs) in the Master Patient Index (MPI) **V*IST*A** package.

Security Keys

There are no security keys exported with the Master Patient Index (MPI) **V*IST*A** package.

File Security

File #	File Name	DD	RD	WR	DEL	LAYGO	AUDIT
984.1	MASTER PATIENT INDEX (LOCAL NUMBERS)	@	@	@	@	@	@
984.5	MPI CHECKDIGIT	@	@	@	@	@	@
984.8	MPI ICN BUILD MANAGEMENT	@	@	@	@	@	@
984.9	MPIF CMOR REQUEST	@	@	@	@		

Figure 32: Software Product Security: File Security

Glossary

10-10EZ	Form used to apply for health benefits.
ACTIVE PATIENTS	Patients who have been seen at a site within the past three years.
ABBREVIATED RESPONSE	This feature allows you to enter data by typing only the first few characters for the desired response. This feature will not work unless the information is already stored in the computer.
ACCESS CODE	Code that allows the computer to identify you as a user authorized to gain access to the computer. Your code is greater than six and less than twenty characters long; can be numeric, alphabetic, or a combination of both; and is usually assigned by a site manager or application coordinator. (See the term **verify code** in the Glossary.)
ACTIVE PATIENTS	Patients who have been seen at a site within the past three years.
ADPAC	**A**utomated **D**ata **P**rocessing **A**pplication **C**oordinator
ADT	**A**dmission **D**ischarge and **T**ransfer - Part of the Patient Information Management System (PIMS).
ADT/HL7 PIVOT FILE	Changes to any of the fields of patient information will be recorded and an entry created in the ADT/HL7 PIVOT file (#391.71). When an update to a patient's treating facility occurs, this event is added to the ADT/HL7 PIVOT file and marked for transmission. A background job will collect these updates and broadcast the appropriate HL7 message (A08 Patient Update or Master Files Notification [MFN] Treating Facility Updates). This is an ADT HL7 message designed for MPI/PD.
ALERTS	Brief online notices that are issued to users as they complete a cycle through the menu system. Alerts are designed to provide interactive notification of pending computing activities, such as the need to reorder supplies or review a patient's clinical test results. Along with the alert message is an indication that the View Alerts common option should be chosen to take further action.
ANCILLARY REVIEWER	This can be a single person or group of people given the responsibility to conduct reviews of potential duplicate record pairs with data in files other than the PATIENT file (#2). For example, selected personnel in Laboratory, Radiology, and Pharmacy.
APPLICATION COORDINATOR	Designated individuals responsible for user-level management and maintenance of an application package such as IFCAP, Lab, Pharmacy, Mental Health, etc.

APPLICATION PACKAGE	In **V*IST*A**, software and documentation that support the automation of a service, such as Laboratory or Pharmacy, within VA medical centers (see the term Package in the Glossary). The Kernel is like an operating system relative to other **V*IST*A** applications.
BATCH ACKNOWLEDGMENTS	The format of an HL7 batch acknowledgement message consists entirely of a group of ACK (acknowledgment) messages. In the case of MPI, batch acknowledgments are returned during the initialization process and during the Local/Missing ICN Resolution job. The background job files the ICN, ICN checksum, and CMOR, then updates the Treating Facility list. Data returned from this process constitute the acknowledgment of the batch message.
BATCH MESSAGES	There are instances when it is convenient to transfer a batch of HL7 messages. Common examples related to MPI are queries sent to the MPI for an ICN during the initialization process, the resolution of Local or Missing ICNs, and CMOR Batch Comparisons. Such a batch could be sent online using a common file transfer protocol. In the case of the MPI, the HL7 Batch Protocol uses the Batch Header Segment (BHS) and Batch Trailer Segment (BTS) message segments to delineate the batch.
BATCH PROTOCOL, HL7	Protocol utilized to transmit a batch of HL7 messages. The protocol generally uses File Header Segment (FHS), BHS, BTS and File Trailer Segment (FTS) segments to delineate the batch. In the case of the MPI, the protocol only uses the BHS and BTS segments.
BULLETINS	Electronic mail messages that are automatically delivered by MailMan under certain conditions. For example, a bulletin can be set up to fire when database changes occur, such as adding a record to the file of users. Bulletins are fired by bulletin-type cross-references.
CALLABLE ENTRY POINT	Authorized programmer call that may be used in any **V*IST*A** application package. The DBA maintains the list of DBIC-approved entry points.
COORDINATING MASTER OF RECORD (CMOR) (Also see CMOR [COORDINATING MASTER OF RECORD].)	The CMOR site is the designated "owner" of the patient's descriptive and clinical data. A patient has only one CMOR at a time, but the CMOR can change. Initially, the MPI assigns the Coordinating Master of Record based upon the first site at which the MPI encounters the patient. The designation of a site as the CMOR for a patient does not provide "workload credit" or any other distinction. This is a new field in the PATIENT file (#2). The CMOR keeps the Treating Facility List and Subscription List updated every time a new facility where the patient has been seen identifies itself to the MPI. The CMOR then broadcasts the updated lists to all the other facilities that share this patient.

CLINICAL PATIENT RECORD SYSTEM (CPRS)

Clinical **P**atient **R**ecord **S**ystem provides a computer-based patient record and organizes and presents all relevant data on a patient in a way that directly supports clinical decision-making. CPRS integrates the extensive set of clinical and administrative applications available within **V***IST***A**.

The MPI/PD software is built upon the foundation created by the CPRS work.

CMOR (COORDINATING MASTER OF RECORD)

(Also see COORDINATING MASTER OF RECORD [CMOR].)

The CMOR site is the designated "owner" of the patient's descriptive and clinical data. A patient has only one CMOR at a time, but the CMOR can change. Initially, the MPI assigns the Coordinating Master of Record based upon the first site at which the MPI encounters the patient. The designation of a site as the CMOR for a patient does not provide "workload credit" or any other distinction. This is a new field in the PATIENT file (#2).

The CMOR keeps the Treating Facility List and Subscription List updated every time a new facility sends an "add me" message to the CMOR for a particular patient. The CMOR then broadcasts the updated lists to all the other facilities that share this patient.

CMOR ACTIVITY SCORE

During the Pre-Implementation, a CMOR score based on activity (Current FY, FY-1, and FY-2) is calculated for the active patients in a site's PATIENT file (#2). The CMOR score indicates which patients in a PATIENT file (#2) have activity. During initialization of a site's database with the MPI, the first site at which the MPI encounters a patient is assigned as the CMOR. After MPI initialization, the CMOR score is used to compare a patient's activity at two sites to help determine the logical Coordinating Master of Record. The CMOR activity score is stored in the PATIENT file (#2) along with the date last calculated. It can be recalculated as needed. Following the initialization with the MPI, a site runs an option that identifies the shared patients for which it is **not** the CMOR. An option is provided to send messages to the CMOR sites in order to compare the CMOR scores and reassign the CMOR if that action appears to be appropriate. Changing the CMOR requires agreement between the two sites involved.

COMMON MENU

Options that are available to all users. Entering two question marks at the menus select prompt displays any secondary menu options available to the signed-on user, along with the common options available to all users.

CROSS REFERENCE	Cross-reference—There are several types of cross-references available. Most generally, a VA FileMan cross-reference specifies that some action is performed when the field's value is entered, changed, or deleted. For several types of cross-references, the action consists of putting the value into a list; an index used when looking-up an entry or when sorting. The regular cross-reference is used for sorting and for lookup; you can limit it to sorting only.
DATA	A representation of facts, concepts, or instructions in a formalized manner for communication, interpretation, or processing by humans or by automatic means. The information you enter for the computer to store and retrieve. Characters that are stored in the computer system as the values of local or global variables. VA FileMan fields hold data values for file entries.
DATA ATTRIBUTE	A characteristic of a unit of data such as length, value, or method of representation. VA FileMan field definitions specify data attributes.
DATA DICTIONARY (DD)	The Data Dictionary is a global containing a description of what kind of data is stored in the global corresponding to a particular file. The data is used internally by VA FileMan for interpreting and processing files. A **D**ata **D**ictionary contains the definitions of a file's elements (fields or data attributes); relationships to other files; and structure or design. Users generally review the definitions of a file's elements or data attributes; programmers review the definitions of a file's internal structure.
DATA DICTIONARY ACCESS	A user's authorization to write/update/edit the data definition for a computer file. Also known as DD Access.
DATA DICTIONARY LISTING	This is the printable report that shows the data dictionary. Users and programmers use DDs.
DATABASE	A set of data, consisting of at least one file, that is sufficient for a given purpose. The **V*IST*A** database is composed of a number of VA FileMan files. A collection of data about a specific subject, such as the PATIENT file (#2); a data collection has different data fields (e.g., patient name, SSN, Date of Birth, and so on). An organized collection of data about a particular topic.
DATABASE MANAGEMENT SYSTEM	A collection of software that handles the storage, retrieval, and updating of records in a database. A **D**ata**b**ase **M**anagement **S**ystem (DBMS) controls redundancy of records and provides the security, integrity, and data independence of a database.
DATABASE, NATIONAL	A database that contains data collected or entered for all VHA sites.

DBA	**D**ata**b**ase **A**dministrator, oversees package development with respect to **V***IST***A** Standards and Conventions (SAC) such as namespacing. Also, this term refers to the **D**ata**b**ase **Administration** function and staff.
DBIA	**D**ata**b**ase **I**ntegration **A**greement, a formal understanding between two or more **V***IST***A** packages, which describes how data is shared or how packages interact. The DBA maintains a list of DBIAs.
DBIC	**D**ata**b**ase **I**ntegration **C**ommittee. Within the purview of the DBA, the committee maintains a list of DBIC approved callable entry points and publishes the list on FORUM for reference by application programmers and verifiers.
DEFAULT	Response the computer considers the most probable answer to the prompt being given. It is identified by double slash marks (//) immediately following it. This allows you the option of accepting the default answer or entering your own answer. To accept the default you simply press the Enter (or Return) key. To change the default answer, type in your response.
DELIMITER	Special character used to separate a field, record or string. VA FileMan uses the ^ character as the delimiter within strings.
DEMOGRAPHIC DATA	Identifying descriptive data about a patient, such as: name, sex, date of birth, marital status, religious preference, SSN, address, etc.
DEPARTMENT OF VETERANS AFFAIRS	The Department of **V**eterans **A**ffairs, formerly called the **V**eterans **A**dministration.
DEVICE	Peripheral connected to the host computer, such as a printer, terminal, disk drive, modem, and other types of hardware and equipment associated with a computer. The host files of underlying operating systems may be treated like devices in that they may be written to (e.g., for spooling).
DHCP	**D**ecentralized **H**ospital **C**omputer **P**rogram of the Veterans Health Administration (VHA), Department of Veterans Affairs (VA) is the former name for Veterans Health Information Systems and Technology Architecture **V*IST*A**. **V***IST***A** software, developed by VA, is used to support clinical and administrative functions at VA Medical Centers nationwide. It is written in M and, via the Kernel, runs on all major M implementations regardless of vendor. **V***IST***A** is composed of packages that undergo a verification process to ensure conformity with namespacing and other **V***IST***A** standards and conventions.
DICTIONARY	Database of specifications of data and information processing resources. VA FileMan's database of data dictionaries is stored in the FILE of files (#1).

DINUM	Input variable that identifies the subscript at which the data is to be stored; that is, the internal entry number (IEN) of the record.
DIRECT CONNECT	The Direct Connect is a real-time TCP/IP connection to the Master Patient Index to allow for an immediate request for an ICN. As of MPI Version 1.0, the Direct Connect is activated when using any one the following PIMS options: • Register A Patient, • Load/Edit Patient Data, • 10-10T Registration processes in PIMS, or • Electronic 10-10EZ Processing, and when using the following MPI options: • MPI Single Patient Initialization and • Display Only Query option.
DOUBLE QUOTE (")	Symbol used in front of a Common option's menu text or synonym to select it from the Common menu. For example, the five-character string "TBOX" selects the User's Toolbox Common option.
DUPLICATE RECORD MERGE: PATIENT MERGE (Also see Kernel Toolkit: Duplicate Record Merge: Patient Merge or Patient Merge.)	Patient Merge is a **V*IST*A** application that provides an automated method to eliminate duplicate patient records within the **V*IST*A** database (i.e., the **V*IST*A** PATIENT file [#2]). It consists of three steps: 1. Search for potential duplicate record pairs. 2. Review, verification, and approval of those pairs. 3. Merge process.
DUZ	Local variable holding the user number that identifies the signed-on user.
DUZ(0)	Local variable that holds the File Manager Access Code of the signed-on user.
ELECTRONIC SIGNATURE CODE	Secret password that some users may need to establish in order to sign documents via the computer.
ELIGIBILITY CODES	Codes representing the basis of a patient's eligibility for care.
ENCRYPTION	Scrambling data or messages with a cipher or code so that they are unreadable without a secret key. In some cases encryption algorithms are one directional that is, they only encode and the resulting data cannot be unscrambled (e.g., access/verify codes).
ENTER (<RET>)	Pressing the return or enter key tells the computer to execute your instruction or command or to store the information you just entered.

ENTRY	VA FileMan record. It is uniquely identified by an internal entry number (the .001 field) in a file.
EXCEPTION MESSAGE	MPI/PD generates messages and bulletins to alert the user to problems that occur in generating or processing HL7 messages. The MPI/PD Message Exception Menu contains options to manage the problems.
EXTRINSIC FUNCTION	Extrinsic function is an expression that accepts parameters as input and returns a value as output that can be directly assigned.
FIELD	In a record, a specified area used for the value of a data attribute. The data specifications of each VA FileMan field are documented in the file's data dictionary. A field is similar to blanks on forms. It is preceded by words that tell you what information goes in that particular field. The blank, marked by the cursor on your terminal screen, is where you enter the information.
FILE	Set of related records treated as a unit. VA FileMan files maintain a count of the number of entries or records.
FILE MANAGER (VA FILEMAN)	The **V*IST*A**'s Database Management System (DBMS). The central component of the Kernel that defines the way standard **V*IST*A** files are structured and manipulated.
FORCED QUEUING	Device attribute indicating that the device can only accept queued tasks. If a job is sent for foreground processing, the device rejects it and prompts the user to queue the task instead.
FORM	Screen-oriented display (see ScreenMan).
FORUM	The central E-mail system within **V*IST*A**. It is used by developers to communicate at a national level about programming and other issues. FORUM is located at the CIO Field Office - Washington, DC (162-2).
GLOBAL VARIABLE	Variable that is stored on disk (M usage).
HEALTH LEVEL SEVEN (HL7)	National level standard for data exchange in all healthcare environments regardless of individual computer application systems.
HEALTH LEVEL SEVEN (HL7) BATCH PROTOCOL	Protocol utilized to transmit a batch of HL7 messages. The protocol generally uses FHS, BHS, BTS and FTS segments to delineate the batch. In the case of the MPI, the protocol only uses the BHS and BTS segments.

HEALTH LEVEL SEVEN (HL7) MFN MESSAGES	HL7 Update Treating Facility message type (Master File Notification [MFN]). When an update to a patient's treating facility occurs, this event is added to the ADT/HL7 PIVOT file (#391.71) and marked for transmission. A background job will collect these updates and broadcast the HL7 MFN messages. This is an ADT HL7 message designed for MPI/PD.
HEALTH LEVEL SEVEN (HL7) **V*IST*A**	Messaging system developed as a **V*IST*A** software package that follows the HL7 Standard for data exchange.
HELP FRAMES	Entries in the HELP FRAME file (#9.2) that may be distributed with application packages to provide online documentation. Frames may be linked with other related frames to form a nested structure.
HELP PROCESSOR	Kernel module that provides a system for creating and displaying online documentation. It is integrated within the menu system so that help frames associated with options can be displayed with a standard query at the menu's select prompt.
HELP PROMPT	Brief help that is available at the field level when entering one question mark.
HINQ	**H**ospital **Inq**uiry - The HINQ module provides the capability to request and obtain veteran eligibility data via the VA national telecommunications network. Individual or group requests are sent from a local computer to a remote Veterans Benefits Administration (VBA) computer where veteran information is stored. The VBA network that supports HINQ is composed of four computer systems located in regional VA payment centers.
HOOK OR LINK	Non-specific terms referring to ways in which files may be related (via pointer links) or can be accessed (via hooks).
HOST FILE SERVER (HFS)	Procedure available on layered systems whereby a file on the host system can be identified to receive output. It is implemented by the Device Handler's HFS device type.
I.H.S.	**I**ndian **H**ealth **S**ervice
I.H.S.	**I**ntegrated **H**ospital **S**ystem
IDCU	The **I**ntegrated **D**ata **C**ommunications **U**tility, which is a wide area network, used by VA for transmitting data between VA sites.
INPATIENT	Patient who has been admitted to a hospital in order to be treated for a particular condition.

INTEGRATION CONTROL NUMBER (ICN)	The **I**ntegration **C**ontrol **N**umber is a unique identifier assigned to patients when they are added to the Master Patient Index. The ICN follows the ASTM E1714-95 standard for a universal health identifier. ICNs link patients to their records across VA systems.
INTERNAL ENTRY NUMBER (IEN)	The number used to identify an entry within a file. Every record has a unique internal entry number.
IRM	Information Resource Management. A service at VA medical centers responsible for computer management and system security.
KERNEL	Set of **V*IST*A** software routines that function as an intermediary between the host operating system and the **V*IST*A** application packages such as Laboratory, Pharmacy, IFCAP, etc. The Kernel provides a standard and consistent user and programmer interface between application packages and the underlying M implementation.
KERNEL TOOLKIT	Kernel Toolkit is a robust set of tools developed to aid the Veterans Health Information Systems and Technology Architecture **V*IST*A** development community, and Information Resources Management (IRM), in writing, testing, and analysis of code. They are a set of generic tools that are used by developers, documenters, verifiers, and packages to support distinct tasks. The Toolkit provides utilities for the management and definition of development projects. Many of these utilities have been used by the CIO Field Office - San Francisco for internal management and have proven valuable. Toolkit also includes tools provided by other CIO Field Offices based on their proven utility.
KERNEL TOOLKIT, DUPLICATE RECORD MERGE: PATIENT MERGE (Also see Duplicate Record Merge: Patient Merge or Patient Merge.)	Patient Merge is a **V*IST*A** application that provides an automated method to eliminate duplicate patient records within the **V*IST*A** database (i.e., the **V*IST*A** PATIENT file [#2]). It consists of three steps: 1. Search for potential duplicate record pairs. 2. Review, verification, and approval of those pairs. 3. Merge process.
KEY	The purpose of Security Keys is to set a layer of protection on the range of computing capabilities available with a particular software package. The availability of options is based on the level of system access granted to each user.
KEYWORD	Word or phrase used to call up several codes from the reference files in the LOCAL LOOK-UP file (#8984.4). One specific code may be called up by several different keywords.

LAYGO ACCESS	A user's authorization to create a new entry when editing a computer file. (**L**earn **A**s **Y**ou **GO** allows you the ability to create new file entries.)
LINK	Non-specific term referring to ways in which files may be related (via pointer links). Files have links into other files.
MAIL MESSAGE	An entry in the MESSAGE file (#3.9). The **V*IST*A** electronic mail system (MailMan) supports local and remote networking of messages.
MAILMAN	Electronic mail system that allows you to send and receive messages from other users via the computer.
MANAGER ACCOUNT	UCI that can be referenced by non-manager accounts such as production accounts. Like a library, the MGR UCI holds percent routines and globals (e.g., ^%ZOSF) for shared use by other UCIs.
MANDATORY FIELD	Field that requires a value. A null response is not valid.
MASTER PATIENT INDEX — **V*IST*A**	This software resides in **V*IST*A** and supports the Austin side of the MPI, as well as the CMOR (Coordinating Master Of Record) change requests. MPI **V*IST*A** enables sites to query the MPI (Austin) for the: • Assignment of ICN (i.e., Integration Control Number) and CMOR. • Inactivation of an ICN for a patient. • Known data on the MPI (Austin). Any updates to patient data are then sent to the MPI (Austin) and to sites where a patient has been seen. MPI **V*IST*A** also manages incoming and outgoing Change CMOR requests. (For more information, see the "Product Description: What is the Master Patient Index?" section of this manual.)
MASTER PATIENT INDEX (AUSTIN)	The **M**aster **P**atient **I**ndex is the master index of all VHA patients. The MPI assigns and maintains unique national patient identifiers (i.e., Integration Control Numbers or ICNs) that link patients to their records across VHA systems. The MPI also assigns the initial CMOR (first site to identify the patient to the MPI). It contains patient's identifying descriptive information (e.g., name, SSN, date of birth, mother's maiden name, place of birth state and place of birth city).
MENU	List of choices for computing activity. A menu is a type of option designed to identify a series of items (other options) for presentation to the user for selection. When displayed, menu-type options are preceded by the word "Select" and followed by the word "option" as in Select Menu Management option: (the menu's select prompt).

MENU SYSTEM	The overall Menu Manager logic as it functions within the Kernel framework.
MENU TEMPLATE	An association of options as pathway specifications to reach one or more final destination options. The final options must be executable activities and not merely menus for the template to function. Any user may define user-specific menu templates via the corresponding Common option.
MENU TEXT	The descriptive words that appear when a list of option choices is displayed. Specifically, the Menu Text field of the OPTION file (#19). For example, User's Toolbox is the menu text of the XUSERTOOLS option. The option's synonym is TBOX.
MENU TREES	The menu system's hierarchical tree-like structures that can be traversed or navigated, like pathways, to give users easy access to various options.
MESSAGE SEGMENTS	Each HL7 message is composed of segments. Segments contain logical groupings of data. Segments may be optional or repeatable. A [ ] indicates the segment is optional, the { } indicates the segment is repeatable. For each message category, there will be a list of HL7 standard segments and/or "Z" segments used for the message.
MPI (AUSTIN)	The **M**aster **P**atient **I**ndex is the master index of all VHA patients. The MPI assigns and maintains unique national patient identifiers (i.e., Integration Control Numbers or ICNs) that link patients to their records across VHA systems. The MPI also assigns the initial CMOR (first site to identify the patient to the MPI). It contains patient's identifying descriptive information (e.g., name, SSN, date of birth, mother's maiden name, place of birth state and place of birth city).
MPI **V*IST*A**	This software resides in **V*IST*A** and supports the Austin side of the MPI, as well as the CMOR (Coordinating Master Of Record) change requests. MPI **V*IST*A** enables sites to query the MPI (Austin) for the: • Assignment of ICN (i.e., Integration Control Number) and CMOR. • Inactivation of an ICN for a patient. • Known data on the MPI (Austin). Any updates to patient data are then sent to the MPI (Austin) and to sites where a patient has been seen. MPI **V*IST*A** also manages incoming and outgoing Change CMOR requests. (For more information, see the "Product Description: What is the Master Patient Index?" section of this manual.)

MPI INITIALIZATION	The process of initializing a site's PATIENT file (#2) with the Master Patient Index (MPI). Initialization synchronizes PATIENT file (#2) information (for active shared patients) with the MPI and identifies facilities where the patient has been treated. This process transfers the Integration Control Number (ICN), Coordinating Master of Record (CMOR), and Treating Facility list for each patient to the patient's record in the **V*IST*A** PATIENT file (#2) at all sites where the patient has been treated. It is also possible to initialize an individual patient to the MPI. This is done through menu options. The initial synchronization of PATIENT file (#2) information (for active, shared patients) with the Master Patient Index and with the patient's treating facilities is an important step in the implementation of the MPI/PD software system.
MPIF CMOR REQUEST mail group	Any requests to change the CMOR will be sent to this Mail Group. They will then be processed (i.e., accepted/rejected) via the CMOR options. The messages serve as a heads-up that there are CMOR requests to process.
MPIF EXCEPTIONS mail group	If a server address is not populated in the CIRN HL7 EXCEPTION TYPE file (#991.11), MAIL GROUP field (#6), MPI exception e-mail messages (problems) that need to be addressed are sent to this mail group. These messages are all technical in nature, involving problems with HL7 messages or conflicts resulting from CMORs or ICNs not found. Any messages sent to the MPIF EXCEPTIONS mail group are automatically sent to the remote mail group G.CIRN EXCEPTION MGT@FORUM.VA.GOV. Normally there isn't anything a site can do to resolve these messages, which is why they are not sent to local members. If necessary, members of this remote mail group will contact site personnel for assistance. Note: The remote member is populated automatically.
MPIF HL7 GROUP mail group	If HL7 messages are automatically sent to the MPI at the Austin Automation Center via the MailMan protocol will this mail group be utilized. This mail group contains the remote member: S.HL V16 SERVER@MPI.ISC-ALBANY.VA.GOV. No other members should be added to this group. **MailMan is currently not utilized for sending the HL7 messages for MPI/PD, TCP/IP protocol is used instead.
NAMESPACING	Convention for naming **V*IST*A** package elements. The DBA assigns unique character strings for package developers to use in naming routines, options, and other package elements so that packages may coexist. The DBA also assigns a separate range of file numbers to each package.

NODE	In a tree structure, a point at which subordinate items of data originate. A name and a unique subscript characterize an M (previously referred to as MUMPS) array element. Thus the terms: node, array element, and subscripted variable are synonymous. In a global array, each node might have specific fields or "pieces" reserved for data attributes such as name.
NON CMOR SITES	Sites that are not the CMOR for a given patient but which nevertheless have an interest in the patient.
NUMERIC FIELD	Response that is limited to a restricted number of digits. It can be dollar valued or a decimal figure of specified precision.
OPERATING SYSTEM	Basic program that runs on the computer, controls the peripherals, allocates computing time to each user, and communicates with terminals.
OPTION	An entry in the OPTION file (#19). As an item on a menu, an option provides an opportunity for users to select it, thereby invoking the associated computing activity. Options may also be scheduled to run in the background, non-interactively, by Task Manager.
OPTION NAME	Name field in the OPTION file (e.g., XUMAINT for the option that has the menu text "Menu Management"). Options are namespaced according to **V***IST***A** conventions monitored by the DBA.
PAC	**P**rogrammer **A**ccess **C**ode - Optional user attribute that may function as a second level password into programmer mode.
PACKAGE	The set of programs, files, documentation, help prompts, and installation procedures required for a given software application. For example, Laboratory, Pharmacy, and PIMS are packages. A **V***IST***A** software environment composed of elements specified via the PACKAGE file (#9.4). Elements include files and associated templates, namespaced routines, and namespaced file entries from the OPTION, HELP FRAME, BULLETIN, and FUNCTION files. As public domain software, packages may be requested through the Freedom of Information Act (FOIA).
PASSWORD	A user's secret sequence of keyboard characters, which must be entered at the beginning of each computer session to provide the user's identity.
PATIENT DEMOGRAPHICS (PD)	Identifying descriptive information about a patient. With MPI/PD, key demographic information for a patient is the same at each of the treating facilities where that patient is seen. Also, a module of the MPI/PD package.

PATIENT MERGE (Also see Duplicate Record Merge: Patient Merge or Kernel Toolkit, Duplicate Record Merge: Patient Merge.)	Patient Merge is a **V*IST*A** application that provides an automated method to eliminate duplicate patient records within the **V*IST*A** database (i.e., the **V*IST*A** PATIENT file [#2]). It consists of three steps: 1. Search for potential duplicate record pairs. 2. Review, verification, and approval of those pairs. 3. Merge process.
PATIENT, SENSITIVE	Patient whose record contains certain information, which may be deemed sensitive by a facility, such as political figures, employees, patients with a particular eligibility or medical condition. If a shared patient is flagged as sensitive at one of the treating sites, a bulletin is sent to the DG SENSITIVITY mail group at each subscribing site telling where, when, and by whom the flag was set. Each site can then review whether the circumstances meet the local criteria for sensitivity flagging.
PERIPHERAL DEVICE	Any hardware device other than the computer itself (central processing unit plus internal memory). Typical examples include card readers, printers, CRT units, and disk drives.
PHANTOM JUMP	Menu jumping in the background. Used by the menu system to check menu pathway restrictions.
PIMS	**P**atient **I**nformation **M**anagement **S**ystem - **V*IST*A** software package that includes Registration and Scheduling packages.
POINTER	The address at which a data value is stored in computer memory. A relationship between two VA FileMan files, a pointer is a file entry that references another file (forward or backward). Pointers can be an efficient means for applications to access data by referring to the storage location at which the data exists.
PRIMARY MENUS	The list of options presented at sign-on. Each user must have a primary menu in order to sign-on and reach Menu Manager. Users are given primary menus by IRM. This menu should include most of the computing activities the user needs.
PRIMARY REVIEWER	This can be a single person or group of people given the overall responsibility to initiate reviews of potential duplicate record pairs. For example, selected personnel in Patient Administration or a task force or group formed to oversee and conduct the effort of reducing or eliminating the occurrence of duplicate records in the site's database.
PRODUCTION ACCOUNT	The UCI where users log on and carry out their work, as opposed to the manager, or library, account.
PROGRAM	List of instructions written in a programming language and used for computer operations.

PROGRAMMER ACCESS	The ability to use **V***IST***A** features reserved for programmers. Having the programmer's at-sign, when DUZ(0)=@, enables programmer access.
PROMPT	The computer interacts with the user by issuing questions called prompts, to which the user issues a response.
PROTOCOL	Entry in the PROTOCOL file (#101). Used by the Order Entry/Results Reporting (OE/RR) package to support the ordering of medical tests and other activities. The Kernel includes several protocol-type options for enhanced menu displays within the OE/RR package.
PSEUDO-SSNs	False **S**ocial **S**ecurity **N**umbers that are calculated internally to **V***IST***A** and cannot be mistaken for valid SSNs because they end in P. Updating active patients' missing or pseudo-SSNs is on of the functions of MPI/PD pre-implementation. Patients with pseudo-SSNs can be sent to the MPI (Austin) for a national ICN and CMOR assignment. However, pseudo-SSNs will NOT be used to assist in the lookup of that patient entry on the MPI. If that patient is found to already exist on the MPI, and if the MPI has record of their SSN, then the Pseudo-SSN will not be uploaded to the PATIENT file (#2).
QUEUING	Requesting that a job be processed in the background rather than in the foreground within the current session. Jobs are processed sequentially (first-in, first-out). The Kernel's Task Manager handles the queuing of tasks.
QUEUING REQUIRED	Option attribute that specifies that the option must be processed by Task Manager (the option can only be queued). The option may be invoked and the job prepared for processing, but the output can only be generated during the specified time periods.
READ ACCESS	A user's authorization to read information stored in a computer file.
RECEIVING SITE	Receiving Site — As it relates to HL7 Messages, it is the site that the message was sent to.
RECORD	Set of related data treated as a unit. An entry in a VA FileMan file constitutes a record. A collection of data items that refer to a specific entity (e.g., in a name-address-phone number file, each record would contain a collection of data relating to one person).

REGISTRATION PROCESS	During a registration, if a patient does not have an ICN , the patient is checked against the entries in the MPI to determine if the patient already is established or needs to be added. The MPI may return a list of patients who are possible matches. If the patient is truly new and there are no potential matches in the MPI, the MPI will assign an ICN and assigns the requesting site as the CMOR. If the patient is already known at the MPI, the ICN and CMOR is returned and a HL7 message is sent to the CMOR to add this new facility to the list of Treating Facilities for this patient. Registration for patients who already have an ICN at the Facility. At the CMOR site, A04 Registration HL7 messages are sent to the MPI and all sites where the patient is known. These messages update the date of last activity and any changes to the descriptive data. At a non-CMOR site, an A04 Registration HL7 message is sent to the Coordinating Master of Record.
REQUESTING SITE	Requesting Site — As it relates to HL7 Messages, it is the site initiating a message to another site requesting some action be taken.
RETURN KEY	On the computer keyboard, the key located where the carriage return is on an electric typewriter. It is used in **V*IST*A** to terminate "reads." Symbolized by <RET>.
RG CIRN DEMOGRAPHIC ISSUES mail group	PIMS Personnel (e.g., ADPACs and/or Coordinators, etc.) are automatically notified of problems relating to data. Problems such as: • Patient's dates of death not being synchronized between your local PATIENT file (#2) and the MPI. • Patient entries with missing required field(s) (i.e., Date of Birth or Name) when trying to add them to the MPI. • Potential matches were found during the initialization or during the Local/Missing ICN resolution job that need to be resolved manually in order to obtain an ICN.
ROUTINE	Program or a sequence of instructions called by a program that may have some general or frequent use. M (previously referred to as MUMPS) routines are groups of program lines, which are saved, loaded, and called as a single unit via a specific name.
SAC	**S**tandards **a**nd **C**onventions. Through a process of verification, **V*IST*A** packages are reviewed with respect to SAC guidelines as set forth by the Standards and Conventions Committee (SACC). Package documentation is similarly reviewed in terms of standards set by the Documentation Standards and Conventions Committee (DSCC).
SACC	**V*IST*A**'s **S**tandards **a**nd **C**onventions **C**ommittee. This Committee is responsible for maintaining the SAC.
SCHEDULING OPTIONS	The technique of requesting that Task Manager run an option at a given time, perhaps with a given rescheduling frequency.

SCREENMAN FORMS	Screen-oriented display of fields, for editing or simply for reading. VA FileMan's Screen Manager is used to create forms that are stored in the FORM file (#.403) and exported with a package. Forms are composed of blocks (stored in the BLOCK file [#.404]) and can be regular, full screen pages or smaller, pop-up pages for multiples.
SECONDARY MENUS	Options assigned to individual users to tailor their menu choices. If a user needs a few options in addition to those available on the Primary menu, the options can be assigned as secondary options. To facilitate menu jumping, secondary menus should be specific activities, not elaborate and deep menu trees.
SECURITY KEY	The purpose of Security Keys is to set a layer of protection on the range of computing capabilities available with a particular software package. The availability of options is based on the level of system access granted to each user.
SEGMENT TABLE DEFINITIONS	For each segment, the data elements are described in table format. The table includes the sequence number (SEQ), maximum length (LEN), data type (DT), required or optional (R/O), repeatable (RP/#), the table number (TBL #), the element name, and the **V*IST*A** description.
SENDING SITE	Sending Site — As it relates to HL7 Messages, it is the site that is transmitting the message to another site.
SENSITIVE PATIENT	Patient whose record contains certain information may be deemed sensitive by a facility, such as political figures, employees, and patients with a particular eligibility or medical condition. If a shared patient is flagged as sensitive at one of the treating sites, a bulletin is sent to the DG SENSITIVITY mail group at each subscribing site telling where, when, and by whom the flag was set. Each site can then review whether the circumstances meet the local criteria for sensitivity flagging.
SENSITIVIT	This is a mail group at each subscribing site telling where, when, and by whom the flag was set. Each site can then review whether the circumstances meet the local criteria for sensitivity flagging.
SERVER	Entry in the OPTION file (#19). An automated mail protocol that is activated by sending a message to a server at another location with the "S.server" syntax. This activity is specified in the OPTION file.
SET OF CODES	Usually a preset code with one or two characters. The computer may require capital letters as a response (e.g., M for male and F for female). If anything other than the acceptable code is entered, the computer rejects the response.

SHARED PATIENT	Patient who has been seen at more than one site. The CMOR keeps the Treating Facility List and Subscription List updated every time a new facility where the patient has been seen identifies itself to the MPI. The CMOR then broadcasts the updated lists to all the other facilities that share this patient.
SITE MANAGER/ IRM CHIEF	At each site, the individual who is responsible for managing computer systems, installing and maintaining new modules, and serving as liaison to the CIO Field Offices.
SPACEBAR RETURN	You can answer a VA FileMan prompt by pressing the spacebar and then the Return key. This indicates to VA FileMan that you would like the last response you were working on at that prompt recalled.
SPECIAL QUEUING	Option attribute indicating that Task Manager should automatically run the option whenever the system reboots.
SPOOLER	Spooling (under any system) provides an intermediate storage location for files (or program output) for printing at a later time. In the case of **V*IST*A**, the Kernel manages spooling so that the underlying OS mechanism is transparent. The Kernel subsequently transfers the text to the ^XMBS global for despooling (printing).
STOP CODE	Number (i.e., a subject area indicator) assigned to the various clinical, diagnostic, and therapeutic sections of a facility for reporting purposes. For example, all outpatient services within a given area (e.g., Infectious Disease, Neurology, and Mental Hygiene—Group) would be reported to the same clinic stop code.
SUBSCRIBER	A subscriber is an entity, which receives updates to a patient's descriptive data from other sites. All treating facilities are also made subscribers as part of the MPI/PD processes.
SUBSCRIPT	Symbol that is associated with the name of a set to identify a particular subset or element. In M (previously referred to as MUMPS), a numeric or string value that: is enclosed in parentheses; is appended to the name of a local or global variable; identifies a specific node within an array.
SUBSCRIPTION	Process used to identify the sites that will receive clinical and/or descriptive information for a patient.
SYNCHRONIZED PATIENT DATA	Key descriptive fields in the PATIENT file (#2) that are updated in all the descriptive subscriber's PATIENT files whenever the fields a re edited by a subscriber.
SYNONYM	Field in the OPTION file (#19). Options may be selected by their menu text or synonym (see Menu Text).

TASK MANAGER	Kernel module that schedules and processes background tasks (also called Task Manager).
TEMPLATE	Means of storing report formats, data entry formats, and sorted entry sequences. A template is a permanent place to store selected fields for use at a later time. Edit sequences are stored in the INPUT TEMPLATE file (#.402), print specifications are stored in the PRINT TEMPLATE file (#.4), and search or sort specifications are stored in the SORT TEMPLATE file (#.401).
TIMED-READ	The amount of time a READ command waits for a user response before it times out.
TOOLKIT	Toolkit (or Kernel Toolkit) is a robust set of tools developed to aid the Veterans Health Information Systems and Technology Architecture **V*IST*A** development community, and Information Resources Management (IRM), in writing, testing, and analysis of code. They are a set of generic tools that are used by developers, documenters, verifiers, and packages to support distinct tasks. The Toolkit provides utilities for the management and definition of development projects. Many of these utilities have been used by the CIO Field Office - San Francisco for internal management and have proven valuable. Toolkit also includes tools provided by other CIO Field Offices based on their proven utility.
TREATING FACILITY	Any facility (VAMC) where a patient has applied for care, or has been added to the local PATIENT file (#2) (regardless of VISN) and has identified this patient to the MPI will be placed in the TREATING FACILITY LIST file (#391.91).
TREATING FACILITY LIST	Table of institutions at which the patient has received care. This list is used to create subscriptions for the delivery of patient clinical and demographic information between sites.
TREE STRUCTURE	Term sometimes used to describe the structure of an M array. This has the same structure as a family tree, with the root at the top and ancestor nodes arranged below according to their depth of subscripting. All nodes with one subscript are at the first level, all nodes with two subscripts at the second level, and so on.
TRIGGER	A type of VA FileMan cross-reference. Often used to update values in the database given certain conditions (as specified in the trigger logic). For example, whenever an entry is made in a file, a trigger could automatically enter the current date into another field holding the creation date.
TRIGGER EVENTS	An activity in **V*IST*A** that creates HL7 messages.

TYPE-AHEAD	Buffer used to store characters that are entered before the corresponding prompt appears. Type-ahead is a shortcut for experienced users who can anticipate an expected sequence of prompts.
UCI	**U**ser **C**lass **I**dentification, a computing area. The MGR UCI is typically the manager's account, while VAH or ROU may be production accounts.
USER ACCESS	This term is used to refer to a limited level of access, to a computer system, which is sufficient for using/operating a package, but does not allow programming, modification to data dictionaries, or other operations that require programmer access. Any option, for example, can be locked with the key XUPROGMODE, which means that invoking that option requires programmer access. The user's access level determines the degree of computer use and the types of computer programs available. The Systems Manager assigns the user an access level.
VA	The Department of **V**eterans **A**ffairs, formerly called the **V**eterans **A**dministration.
VA FILEMAN	Set of programs used to enter, maintain, access, and manipulate a database management system consisting of files. A package of online computer routines written in the M language, which can be used as a stand-alone database system or as a set of application utilities. In either form, such routines can be used to define, enter, edit, and retrieve information from a set of computer stored files.
VARIABLE	Character, or group of characters, that refer to a value. M (previously referred to as MUMPS) recognizes 3 types of variables: local variables, global variables, and special variables. Local variables exist in a partition of main memory and disappear at sign-off. A global variable is stored on disk, potentially available to any user. Global variables usually exist as parts of global arrays. The term "global" may refer either to a global variable or a global array. A special variable is defined by systems operations (e.g., $TEST).
VENDOR INDEPENDENCE	A goal of **V***IST***A**: to develop a system that does not assume the existence of a particular hardware/software platform supplied by a particular vendor. (See Operating System Independence.)
VERIFY CODE (see PASSWORD)	Additional security precaution used in conjunction with the Access Code. Like the Access Code, it is also 6 to 20 characters in length and, if entered incorrectly, will not allow the user to access the computer. To protect the user, both codes are invisible on the terminal screen.
VISN	**V**eterans **I**ntegrated **S**ervice **N**etwork

V*IST*A	**V**eterans **H**ealth **I**nformation **S**ystems and **T**echnology **A**rchitecture **V*IST*A** (formerly the Decentralized Hospital Computer Program [DHCP]) of the Veterans Health Administration (VHA), Department of Veterans Affairs (VA). **V*IST*A** software, developed by VA, is used to support clinical and administrative functions at VA Medical Centers nationwide. It is written in M, and, via the Kernel runs on all major M implementations regardless of vendor. **V*IST*A** is composed of packages, which undergo a verification process to ensure conformity with namespacing and other **V*IST*A** standards and conventions.
Z SEGMENTS	HL7 custom segment format. Z segments are used when the standard HL7 V. 2.3 does not meet the needs to share data. Each Z segment must be approved by the HL7 Administrator within Technical Services.

Appendix A – MPI/PD Business Rules

CMOR CHANGES	Receiving site must be a treating facility (patient must be registered there).
DATE OF DEATH	A patient may be entered as deceased at a treating facility. If a shared patient is flagged as deceased, a bulletin is sent to the RG CIRN DEMOGRAPHIC ISSUES mail group. The bulleting tells where the deceased date was entered and the date the patient died. Each site can then review whether the patient should be marked as deceased at their site.
DUPLICATE ICNS	D More than one patient in a single PATIENT file (#2) cannot have the same ICN. For example, let's say that the MPI returned an ICN to your local PATIENT file (#2) for a patient who previously did not have one assigned. If that same ICN is currently assigned to a different patient in your PATIENT file (#2), an exception (problem) e-mail message is sent to the MPIF EXCEPTIONS mail group, and the ICN, CMOR, and treating facilities list is not updated for this new patient.
INSTITUTION FILE	A site can be in only one VISN at a time. A record in the INSTITUTION file (#4) can not have two parents of the same type. A record in the INSTITUTION file cannot be a child and have children of its own.
MPI (AUSTIN)	The MPI assigns a national ICN and the initial CMOR (i.e., the initial CMOR is the first site to identify the patient to the MPI). It accepts update messages only from the CMOR. The MPI maintains a copy of the treating facilities list, but not the subscription list. Subscriber messages are not sent to the MPI.
PATIENT SENSITIVITY	If a shared patient is flagged as sensitive at one of the treating sites, a bulletin is sent to the RG CIRN DEMOGRAPHIC ISSUES mail group at each subscribing site telling where, when, and by whom the flag was set. Each site can then review whether the circumstances meet the local criteria for sensitivity flagging. If the site chooses to change the patient to a sensitive status, the option to do so would be used and then a bulletin would be sent to the mail group established in the PIMS package for notifying users of a sensitive patient change.
START-UP (ONLY)	A patient's CMOR will be the first treating site that identifies the patient to the MPI.

SUBSCRIPTIONS	All Subscribers to clinical data will be subscribers to descriptive data. A clinical subscriber can change to a descriptive category. Subscribers that are not designated as treating facilities may deactivate their subscription using an expiration date. Treating Facilities will be clinical subscribers unless they request descriptive only. Treating facilities may not deactivate from descriptive subscriptions. Sites can only subscribe/unsubscribe themselves except in cases of automatic subscription (treating facility). Descriptive subscription lists will be synchronized.
TREATING FACILITIES	Broadcast messages to add a treating facility for a patient will come only from the Coordinating Master of Record (CMOR). Site requesting to be added sends message to CMOR, CMOR broadcasts A08 update message.
UPDATE MESSAGES	Descriptive data update messages are broadcast by the CMOR. Clinical data updates are broadcast directly to the subscribers by the treating facility.

Appendix B – MPI/PD Event Queue

Introduction

The event queue feature consists of the Event Queue global, ^RGEQ(, and the Event Queue back ground job (daemon). Triggering events can come from a variety of sources. These include demographic and clinical subscription control updates. These updates may generate an HL7 message to a remote source (i.e. subscription or Coordinating Master Of Record (CMOR) request to remote facilities).
The MPI/PD Event Queue must be started and running for several types of messaging updates to occur. These include Subscription Control, Coordinating Master of Record Request, and others.

Activities that use the MPI/PD Event Queue for transmission will place a stub record into the Event Queue global. This is a temporary storage area for these records. As the events in the Event Queue are processed, these records are removed from the Event Queue global. When triggering events place a "stub" record in the Event Queue global control is returned immediately to the **V*IST*A** software application or option to minimize the impact on the triggering software application or its users.

MPI/PD Event Queue Structure

The format of the Event Queue global entries is as follows:

^RGEQ(type,stub_record_ien[,returned_error_code,event_protocol]) = ""

The "type" is the text name of the event type from CIRN EVENT ASSOCIATION file (#995). Some examples of these are:

Event Type	Event Name
CH	Laboratory Chemistry Result
CH_BL	Historical Back Load of Chemistry Result Data
CMOR REQUEST	CMOR Request
RX	Outpatient Prescription Entry or Edit
RX_BL	Historical Back Load of Outpatient Pharmacy Data
SCN_REQ	Subscription Request

The CIRN EVENT ASSOCIATION file (#995) also contains the name of the routine that will be invoked to process each type of event.

The "stub_record_ien" is the internal record entry number for the record in the file that caused the event. Examples of these are the internal entry number of a prescription from the PRESCRIPTION file (#52), or an entry in the PTF file (#45) for a patient who was discharged.

The "returned_error_code" and "event_protocol" are optional parameters.

The "returned_error_code" is the error that will be returned if HL7 is unable to generate a message for transmission.

The "event_ protocol" is the internal number of the entry in the PROTOCOL file (#101). Some messages are generated by protocols and other messages are generated by routines.

Managing the MPI/PD Event Queue

Starting the MPI/PD Event Queue

The MPI/PD Event Queue options will be installed during the installation of MPI/PD.

Upon installation the MPI/PD Event Queue is inactive. To activate it several steps must be taken.

1. First, the MPI/PD Event Queue must be started. This is accomplished by using the Start MPI/PD Event Queue [RGEQ START] option on the MPI/PD Event Queue Manager menu [RGEQ MGR]. If this is not done, the Event Queue global will not accept the creation of stub entries to be processed.

   This will set the top-level entry in the Event Queue global (^RGEQ("ASTOP")) to NO. This is correct. The "ASTOP" subscript may be viewed as "Asked to Stop". If this entry is set to YES, the MPI/PD Event Queue will not accept the creation of stub messages for processing.

   In addition to setting the Event Queue global to accept entries, executing this option will also cause the Event Queue daemon (background routine) to be tasked to run immediately. The Event Queue daemon will check the Event Queue global for entries that need to be processed. If entries exist, and all required parameters are set to allow processing, the daemon will generate a new tasked background (subdaemon) job for each event type in the Event Queue global. Once each routine finishes with its event type it will quit. The Event Queue daemon will quit if there are no entries to be processed in the Event Queue global. TaskManager will restart it at its regularly scheduled time.

2. Second, the Send PIMS HL7 V2.3 Messages field (#391.7013) in the MAS PARAMETERS file (#43) must be set to SEND. This field can be set to STOP (0), SEND (1), or SUSPEND (2). If this field is set to anything other than SEND, entries may still be created in the Event Queue global but they will not be processed by the Event Queue daemon.

3. The MPI/PD Event Queue Autostart option [RGEQ AUTOSTART] should be tasked to run with a frequency of every 600 seconds. This will restart the Event Queue Daemon to check for Event Queue entries that require processing. This restarted job will stop if the Event Queue daemon is already running.

Other System Functions that May Effect the MPI/PD Event Queue

There are several other system tasks that may effect being able to start or stop the MPI/PD Event Queue.

1. TaskManager must be running. If TaskManager is not running or has a backlog of tasks, the Event Queue daemon will continue to task jobs for new events but the jobs may not start in a timely manner.

2. The HL7 filers must be running. These may be monitored using the appropriate options on the V. 1.6 HL7 Main Menu [HL MAIN MENU]. If the filers are not running, entries will not be placed into the Event Queue global and updates to external demographic and clinical subscribers will not be processed. In addition, the HL7 Logical Links for external subscribing sites (including the Master Patient Index) must be on line for messages to them to be processed.

Stopping the MPI/PD Event Queue

There may be circumstances when the Event Queue must be stopped. There are several steps required to do this.

1. The MPI/PD Event Queue Autostart [RGEQ AUTOSTART] option must be unscheduled using the appropriate TaskManager option. If it is not unscheduled, TaskManager will restart the Event Queue daemon at its scheduled time, reset the Event Queue global to accept new entries for processing, and begin processing the existing entries in the Event Queue global once again. This should be done before proceeding to step 2.

2. The MPI/PD Event Queue must be stopped if you wish to prevent new entries from being added to the Event Queue global for processing. Existing entries in this global will not be removed and will remain until the Event Queue daemon restarts and processes the entries. Simply stopping the Event Queue by using the Halt MPI/PD Event Queue option [RGEQ STOP] on the MPI/PD Event Queue Manager [RGEQ MGR] will not stop the processing of Event Queue entries. If the Event Queue daemon is currently running or MPI/PD Event Queue Autostart option is still scheduled to run the entries in the Event Queue global will continue to be processed.

3. The Send PIMS HL7 V2.3 MESSAGES field (#391.7013) in the MAS PARAMETERS file (#43) should be set to STOP (0) or SUSPEND (2). This will also prevent entries in the Event Queue global from being processed.

   The Event Queue should only be stopped in extreme situations and should be restarted, as described above at the earliest moment possible.

   There also may be instances where it may be necessary to stop the processing of existing entries in the MPI/PD Event Queue but the accumulation of entries in the Event Queue global is also desirable. To do this:

4. The MPI/PD Event Queue Autostart [RGEQ AUTOSTART] option must be unscheduled using the appropriate TaskManager option. If it is not unscheduled, TaskManager will restart the Event Queue daemon at its scheduled time, reset the Event Queue global to accept new entries for processing, and begin processing the existing entries in the Event Queue global once again. This should be done before proceeding to step 2.

5. Stop the Event Queue daemon and subdaemon jobs using the appropriate supplied system utility (i.e., FORCEX, etc.). The Event Queue daemon job (^RGEQDMN) must be stopped first. Then stop the Event Queue subdaemon jobs (^RGEQSUB) in the same manner. Doing this out of sequence will cause the Event Queue daemon to start new subdaemons for the jobs just stopped.

Appendix C – Exceptions and Bulletins

This document has been prepared to give Master Patient Index/Patient Demographic (MPI/PD) sites information and assistance in dealing with exception messages. It provides updated information on exception messages, their resolution, and the MPI/PD Exception Handling option [RG EXCEPTION HANDLING] introduced in RG*1*3.

RG CIRN Demographic Issues Bulletins

MPI/PD sends several bulletins to the RG CIRN DEMOGRAPHIC ISSUES mail group on FORUM. These are designed to alert Medical Administration Service (MAS) personnel of problems related to MPI/PD information processing. They are:

Patient-Related Bulletins:

- Missing Data
- Patient Not Found (DG*5.3*261 replaces this bulletin with an exception message to the MPIF Exceptions mail group for resolution by Master Patient Index/Patient Demographics (MPI/PD) team members or National **V***IST***A** Support (NVS).
- Inconsistent Data (DG*5.3*261 replaces this bulletin with an exception message to the MPIF Exceptions mail group for resolution by MPI/PD team members or NVS.)
- Remote Sensitivity Indicated
- Remote Date of Death
- Address Change

Master File Update Bulletins (DG*5.3*261 replaces these bulletins with an exception message to the MPIF Exceptions mail group for resolution by MPI/PD team members or NVS.)**:**

- Patient Not Found (Treating Facility type)
- Inconsistent Data (Treating Facility type)

Note: The two types of HL7 messages referenced above (Patient-Related messages and Master File updates) have distinctly different processing steps as documented in this Appendix.

Patient Related Bulletins

These messages concern any changes in demographic information (such as Marital Status, address, etc.) for a particular patient. All incoming patient-related messages go through the same validation steps. The following patient-related messages and bulletins are discussed further in this documentation:

1. Missing Data bulletin
2. Inconsistent Data bulletin
3. Remote Sensitivity Indicated bulletin
4. Remote Date of Death Indicated bulletin

5. MPI/PD Address Change incoming message

1. Check for Missing Data – Missing Data bulletin

The first step is a check on the incoming HL7 message to make sure that certain required fields are present. These fields are: Name, Social Security Number (SSN) (unless pseudo or not available), Date of Birth (DOB), and Integration Control number (ICN). If one of these fields is missing or null, a Missing Data bulletin is generated.

Note: This bulletin should be very rare since Name, SSN, and DOB are required fields that must be entered in order to add the patient to the database at the sending site. The ICN is provided by the MPI when the patient is initially processed.

```
Subj: CIRN - MISSING DATA  [#93351] 22 Apr 98 11:16  43 Lines
From: CIRN PACKAGE  in 'IN' basket.   Page 1
---------------------------------------------------------------------------

The CIRN Package has received a message from:
ALLEN PARK, MI --> Site Number: 553
This message was missing required data

FIELD: .01 = BURNETT,COREL
FIELD: .02 = FEMALE
FIELD: .03 = 2500501
FIELD: .05 = UNKNOWN
FIELD: .08 = UNKNOWN/NO PREFERENCE
FIELD: .09 = 887438885
FIELD: .097 = 2980422
FIELD: .111 = TESTING NOT2
FIELD: .1112 = 99999
FIELD: .112 = "@"
FIELD: .113 = "@"
FIELD: .114 = ROUND LAKE
FIELD: .115 = NEW YORK
FIELD: .117 = CATTARAUGUS
FIELD: .131 = "@"
FIELD: .132 = "@"
FIELD: .211 = "@"
FIELD: .219 = "@"
FIELD: .2403 = "@"
FIELD: .301 = NO
FIELD: .302 = "@"
FIELD: .31115 = "@"
FIELD: .323 = "@"
FIELD: .351 = "@"
FIELD: .361 = EMPLOYEE
FIELD: .3612 = "@"
FIELD: .3615 = "@"
FIELD: 391 = EMPLOYEE
FIELD: 991.01 = "@"
FIELD: 991.02 =
FIELD: 991.03 = ALBANY, NY
FIELD: 1901 = NO
FIELD: DFN = 7171322
FIELD: FLD = .112;.113;.111;
FIELD: SENDING SITE = 553
FIELD: SENSITIVITY = "@"
FIELD: SENSITIVITY DATE = "@"
FIELD: SENSITIVITY USER = "@"
FIELD: SITENUM = 500
```

Figure 33: Missing Data bulletin

2. Do a match on SSN, and Coordinating Master Record Site (CMOR) – Inconsistent Data bulletin

The second step is the check on the incoming HL7 message to insure that certain data in the incoming message matches the information for the patient at the receiving system. This insures that this, in fact, is the same patient. Data fields that are checked are the Integration Control number (ICN) and the CMOR. If these fields do not match, an Inconsistent Data bulletin is generated. Also, the system compares the SSN; if they do not match, the system will still process the HL7 message and update the patient. It will also add the patient to the exception list and fire this bulletin.

```
Subj: CIRN - INCONSISTENT DATA  [#93364] 23 Apr 98 14:23  51 Lines
From: CIRN PACKAGE  in 'IN' basket.   Page 1
---------------------------------------------------------------------------

The CIRN Package has received a message from:
ALBANY, NY --> Site Number: 500
This message contains data that is inconsistent
with your site's data.

Local Name: BURNETT,COREL
Local SSN: 887438885
Local ICN: 1000304603
Local CMOR: BATAVIA, NY
-----------------------------------------------------------
Remote Data

FIELD: .01 = BURNETT,CARAL
FIELD: .02 = FEMALE
FIELD: .03 = 2340512
FIELD: .05 = DIVORCED
FIELD: .08 = ISLAM
FIELD: .09 = 887438885
FIELD: .097 = 2980423
FIELD: .111 = NANCY STREET SENS
FIELD: .1112 = "@"
FIELD: .112 = "@"
FIELD: .113 = "@"
FIELD: .114 = "@"
FIELD: .115 = "@"
FIELD: .117 =
FIELD: .131 = "@"
FIELD: .132 = "@"
FIELD: .211 = "@"
FIELD: .219 = "@"
FIELD: .2403 = "@"
FIELD: .301 = NO
FIELD: .302 = "@"
FIELD: .31115 = "@"
FIELD: .323 = "@"
FIELD: .351 = "@"
FIELD: .361 = EMPLOYEE
FIELD: .3612 = "@"
FIELD: .3615 = "@"
FIELD: 391 = EMPLOYEE
FIELD: 991.01 = 1000304603
FIELD: 991.02 = 842887
FIELD: 991.03 = ALBANY, NY
FIELD: 1901 = NO
FIELD: DFN = 7169753
FIELD: FLD = .111;
FIELD: SENDING SITE = 500
FIELD: SENSITIVITY = "@"
FIELD: SENSITIVITY DATE = "@"
FIELD: SENSITIVITY USER = "@"
FIELD: SITENUM = 500
```

Figure 34: Inconsistent Data bulletin

3. Remote Sensitivity Indicated – Remote Sensitivity Indicated bulletin

After Steps 1 and 2 complete successfully and we know that we are in fact dealing with the correct patient, the system checks the incoming HL7 message to see if the patient is marked as a "Sensitive" patient at the sending site, but not at the receiving site. If this is true, a Remote Sensitivity Indicated bulletin is generated. This is a clue that you may wish to mark the patient's record as "Sensitive" at the receiving site.

```
Subj: Remote Sensitivity Indicated  [#93001] 11 Mar 98 13:18  8 Lines
From: CIRN PACKAGE  in 'IN' basket.   Page 1  **NEW**
---------------------------------------------------------------------------

The CIRN Package has received a message from:
ALBANY, NY --> Site Number: 500

This message indicates that Pt. BURNETT,CARAL is flagged as Sensitive at
the other facility but is not flagged as Sensitive at your facility.

Remote User Who Flagged the Pt as Sensitive: CARLSON-GOTTS,NANCY
Date/time remote user Flagged Pt Sensitive:  Feb 04, 1998@13:38
```

Figure 35: Remote Sensitivity Indicated bulletin

4. Remote Date of Death Indicated – Remote Date of Death Indicated bulletin

Next, the system checks the incoming HL7 message to see if the patient is marked as deceased at the sending site. If this is true, a Remote Date of Death Indicated bulletin is generated. The bulletin is generated when the remote site has a date of death and the subscribing site does not and also when the remote site has a date of death that is different from the subscribing site's date of death. The receiving site can then review whether to mark the patient as deceased at their site.

The following message is displayed when the remote site has a date of death and the subscribing site does not.

```
Subj: Remote Date of Death Indicated
From: CIRN PACKAGE  in 'IN' basket
---------------------------------------------------------------------------
The CIRN Package has received a message from:
MIAMI --> Site Number: 546546

This message indicates that patient DOE,JOHN
has a date of death at the other facility but not at
your facility.

Date of Death from other facility:  Jun 11, 1999
```

Figure 36: Remote Date of Death Indicated bulletin

The following message is displayed when the remote site has a Date of Death that is different from the subscribing site's Date of Death:

```
Subj: Remote Date of Death Indicated
From: CIRN PACKAGE  in 'IN' basket
---------------------------------------------------------------------------
The CIRN Package has received a message from:
BAY PINES, FL --> Site Number: 516

This message indicates that that patient DOE,JOHN
has a different date of death at the other facility than at
your facility.

Date of Death from other facility:  Jun 04, 1999
Date of Death at your facility:  Jun 11, 1999
```

Figure 37: Remote Date of Death different from subscribing site's Date of Death bulletin

5. Address Change – MPI/PD Address Change incoming message

Finally, the system checks the incoming message to see if any of the address-related information is different than the current information in the receiving site's database. The specific fields checked are: Street Address [LINE 1], Street Address [LINE 2], Street Address [LINE 3], City, State, ZIP+4, and County. The message will indicate all address changes (e.g., Address fields that were deleted from your data based on more recent information from the CMOR site).

```
Subj: BURNETT **CIRN ADDRESS CHANGE** [#93349] 22 Apr 98 10:44  14 Lines
From: CIRN PACKAGE  in 'IN' basket.   Page 1  **NEW**
---------------------------------------------------------------------------
The CIRN Package has received a message from:
ALLEN PARK, MI --> Site Number: 553
This message changed the Address of Patient:
BURNETT,COREL

   <<OLD ADDRESS>>                                      <<NEW ADDRESS>>

STREET ADDRESS [LINE 1]: 2979 MAPLE COURT               SAME
STREET ADDRESS [LINE 2]: APARTMENT 2B                   DELETED
STREET ADDRESS [LINE 3]:                                SAME
CITY: ROUND LAKE                                          ROUND LAKE
COUNTY: CATTARAUGUS                                  CATTARAUGUS
STATE: NEW YORK                                           NEW YORK
ZIP+4: 99999                                         99999
```

Figure 38: MPI/PD Address Change incoming message

MPI/PD Exception Messages

MPI/PD HL7 Exception Messages Related to MPI V*IST*A

During the processing of HL7 messages for the MPI and CMOR options, it is possible for MPI/PD HL7 Exception (problem) messages to be generated. These messages serve to notify, depending on the nature of the problem, IRM and/or Patient Administration personnel, or MPI/PD team members and/or NVS of dilemmas or situations that have been encountered at sites.

Listed below are the FORUM mail groups to which these exception messages are sent, depending on the type of the problem. They are listed by mail group name, type of problem, and recommended mail group members.

1. Members of the RG CIRN DEMOGRAPHIC ISSUES mail group are automatically notified of problems relating to data, such as:

   - Patient's dates of death not being synchronized between your local PATIENT file (#2) and the MPI.
   - Patient entries with missing required field(s) (i.e., Date of Birth or Name) when trying to add them to the MPI.
   - Potential matches were found during the initialization or during the Local/Missing ICN Resolution job [MPIF LOC/MIS ICN RES] that need to be resolved manually in order to obtain an ICN.

   Note: It is recommended that Patient Administration personnel (i.e., Automated Data Processing Application Coordinator (ADPAC) and/or Coordinators, etc.) be made members of this mail group.

2. There are a number of MPI/PD exception messages that are technical in nature. Problems such as data update failures or problems with HL7 messages cause them not to be processed. These messages are not included in this manual because they are sent to the MPIF EXCEPTIONS mail group. MPIF EXCEPTIONS has as the remote member, CIRN EXCEPTION MGT@FORUM.VA.GOV. All messages are automatically sent to this remote FORUM mail group to be resolved by MPI/PD team members or by NVS. They are not sent to local members because normally there isn't anything a site can do to resolve them. If necessary, the remote mail group members will contact the site personnel for assistance.

   Note: MPI exception e-mail messages are sent to the MPIF EXCEPTIONS mail group only if a server address is not populated in the CIRN HL7 EXCEPTION TYPE file (#991.11), MAIL GROUP field (#6).

MPI/PD Exception Handling Option

The following MPI/PD Exception Messages have been replaced by the MPI/PD Exception Handling option. Each message is explained in detail in the section "Resolving the Exceptions" that follows in this manual.

1. Required Field(s) Date of Birth or Name missing for patient sent to MPI
2. SSN Match Failed
3. Name Doesn't Match
4. Death Entry on MPI not in **V*IST*A**
5. Death Entry on **V*IST*A** not in MPI
6. Death Entries on MPI and **V*IST*A** DO NOT Match
7. Potential Matches Returned

To access the MPI/PD Exception Handling option, start at the MPI/PD Patient Admin Coordinator Menu and choose MSG Message Exception Menu.

```
Select MPI/PD Master Menu Option: CORD <RET> MPI/PD Patient Admin
Coordinator Menu

   SP     Site Parameters Edit for CMOR
   CMOR   CMOR User Menu ...
   ADU    MPI/PD Patient Admin User Menu ...
   LOG    Patient Audit Log Reports ...
   MPI    Master Patient Index Menu ...
   MSG    Message Exception Menu ...
   RPT    Management Reports ...

Select MPI/PD Patient Admin Coordinator Menu Option: MSG <RET> Message
Exception Menu

          View Potential Match Patient
          MPI/PD Exception Handling
          Patient MPI/PD Data Inquiry

Select Message Exception Menu Option: MPI/PD Exception Handling
```

Figure 39: MPI/PD Exception Handling

This option gives you a list of exceptions that have not yet been processed. You can sort the list by date (default), by patient, or by exception type. You can also choose to view only those of a selected exception type. The first three actions merely change the order that the patients are listed on the screen.

```
MPI/PD EXCEPTION HANDLING       Nov 02, 2001@11:06:11    Page: 1 of 1
MPI/PD Exception Handling

    Patient            SSN         Dt Rec'd   Exception Type
-------------------------------------------------------------------------
 1  SERIOUS,SAM        111111111   11/2/01    SSN Match Failed
 2  RUGGED,ROBERT      222222222   11/2/01    SSN Match Failed
 3  MERRY,MARY         333333333   11/2/01    SSN Match Failed
 4  MERRY,MARY         333333333   11/2/01    Required field(s) Date of
 5  JOLLY,JAMES A      444444444   11/2/01    Required field(s) Date of
 6  CJOLLY,JAMES B     555555555   11/2/01    Name Doesn't Match
 7  JOLLY,JAMES B      555555555   11/2/01    Potential Matches Returned
 8  BURLY,BENJAMIN     666666666   11/2/01    Potential Matches Returned
 9  RROWDY,ROBERT      222222222   11/2/01    Death Entry on Vista not


         Enter ?? for more actions
SD  Sort Exceptions by Date              VT  View Selected Exception Type
SN  Sort by Patient Name                 SE  Select Exception
ST  Sort by Exception Type
Select Action:Quit// VT  <RET>  Select Exception Type to View
Enter an exception type to view: SSN Match Failed
```

Figure 40: Select Exception Type to View

VT View Selected Exception Type

Figure 41 shows the VT View Selected Exception Type action being used to see only those of the exception type that you've chosen.

```
         Enter ?? for more actions
SD  Sort Exceptions by Date              VT  View Selected Exception Type
SN  Sort by Patient Name                 SE  Select Exception
ST  Sort by Exception Type
Select Action:Quit// VT  <RET>  Select Exception Type to View
Enter an exception type to view: SSN Match Failed



MPI/PD EXCEPTION HANDLING    Nov 02, 2001@11:06:15       Page: 1 of  1
MPI/PD EXCEPTION HANDLING

    Patient          SSN            Dt Rec'd       Exception Type
-------------------------------------------------------------------------
 1  SERIOUS,SAM      111111111      11/2/01        SSN Match Failed
 2  RUGGED,ROBERT    222222222      11/2/01        SSN Match Failed
 3  MERRY,MARY       333333333      11/2/01        SSN Match Failed
```

Figure 41: View Selected Exception Type

SE Select Exception

Figure 42 illustrates using the SE Select Exception to select a specific exception brings you to a screen with more detailed information on the exception as well as the options to perform a Patient Audit, Patient Inquiry, HINQ Inquiry, Display Only Query, Single Patient Initialization to the MPI, Edit Patient Data, and Update the exception Status to Processed.

After processing the exception, which includes:

1. Verifying data and correcting it where necessary.
2. Contacting the CMOR site if necessary.
3. Initializing the patient to the MPI.

You should then Update the Status to Processed and the exception will no longer appear on the exception list, as shown in Figure 43.

```
         Enter ?? for more actions
SD  Sort Exceptions by Date             VT  View Selected Exception Type
SN  Sort by Patient Name                SE  Select Exception
ST  Sort by Exception Type
Select Action:Quit// se  <RET>  Select Exception
Select :  (1-3): 1



MPI/PD EXCEPTION ACTIONS    Nov 02, 2001@11:06:16        Page: 1 of  1
MPI/PD EXCEPTION HANDLING ACTIONS.

    Exception Data
 1   Name:   SERIOUS,SAM
 2    SSN:   111111111
 3    DOB:   1941
 4    DFN:   2
 5    ICN:   1001111111
 6   Date of Death:
 7   Exception Type:     SSN Match Failed
 8   Exception Date:     Nov 02, 1999
 9   Exception Status:   NOT PROCESSED
```

Figure 42: Select Exception you want to process

Figure 43 shows that the Action: Update Status to Processed has been selected, changing the Exception Status field to "PROCESSED." This will cause the exception will no longer appear on the exception list.

```
         Enter ?? for more actions
AUD  Patient Audit                        SPI  Single Patient Init to MPI
PI   Patient Inquiry                      ED   Edit Patient Data
HI   Hinq Inquiry                         UPD  Update Status to Processed
DO   MPI Display Only Query               TF   Treating Facility Inquiry
Select Action:Quit// UPD  <RET>  Update Status to Processed
This option updates the exception status to PROCESSED.
After it is processed it will not be listed in the summary.
Are you sure you want to change the status?YES// <RET>



MPI/PD EXCEPTION ACTIONS        Nov 02, 2001@11:06:20      Page: 1 of 1
MPI/PD EXCEPTION HANDLING ACTIONS.

    Exception Data
 1   Name:   SERIOUS,SAM
 2    SSN:   111111111
 3    DOB:   1941
 4    DFN:   2
 5    ICN:   1001111111
 6   Date of Death:
 7   Exception Type:     SSN Match Failed
 8   Exception Date:     Nov 02, 2001
 9   Exception Status:   PROCESSED
```

Figure 43: Update the Exception Status to "PROCESSED"

Figure 44 shows that the exception for Sam Serious no longer appears on the list. This was caused by the exception status being changed to "PROCESSED" in Figure 43.

```
MPI/PD EXCEPTION HANDLING    Nov 02, 2001@11:06:15       Page: 1 of  1
MPI/PD EXCEPTION HANDLING

    Patient          SSN            Dt Rec'd       Exception Type
-------------------------------------------------------------------------
 2  RUGGED,ROBERT    222222222      11/2/01        SSN Match Failed
 3  MERRY,MARY       333333333      11/2/01        SSN Match Failed


         Enter ?? for more actions
SD  Sort Exceptions by Date             VT  View Selected Exception Type
SN  Sort by Patient Name                SE  Select Exception
ST  Sort by Exception Type
Select Action:Quit//
```

Figure 44: Exception no longer appears on the list

Resolving the Exceptions

When the exception has been processed, meaning that you have verified data, corrected where necessary, and contacted the Coordinating Master of Record (CMOR) site if necessary, then depending on the exception, use either the option Single Patient Init to MPI, or Update the Status to Processed action and the exception will no longer appear on the exception list. In general, Single Patient Init to MPI is used if the patient currently has a locally assigned ICN or no ICN, while Update Status to Processed would be used if the patient already has a nationally assigned ICN. To determine the type of ICN, use VA FileMan to look at the Integration Control Number (national) and Locally Assigned ICN (local) fields in your PATIENT file (#2).

1. Required field(s) Date of Birth or Name missing for Patient sent to MPI

This exception occurs during the initialization of the MPI with your local PATIENT file (#2) if the required fields Name and Date of Birth have not been populated. These required fields must have values before patients can be assigned ICNs.

Resolution:

To resolve this exception first correct any missing fields identified. Figure 45 demonstrates using the Edit Patient Data option to update the Name, Social Security Number, Date of Birth and Date of Death fields. Figure 46 demonstrates using the Single Patient Initialization to MPI option to initialize this patient to the MPI.

```
MPI/PD EXCEPTION ACTIONS        Nov 02, 2001@11:06:30     Page: 1 of 1
MPI/PD EXCEPTION HANDLING ACTIONS.

----Exception Data-----------------------------------------------------
1    Name: MERRY,MARY
2     SSN: 333333333
3     DOB: AUG 22, 1941
4     DFN: 3
5     ICN: 1003333333
6     Date of Death:
7    Exception Type:    Required Field(s) Date of Birth
8    Exception Date:    Nov 02, 2001
     Exception Status:  NOT PROCESSED


         Enter ?? for more actions
AUD  Patient Audit                    SPI  Single Patient Init to MPI
PI   Patient Inquiry                  ED   Edit Patient Data
HI   Hinq Inquiry                     UPD  Update Status to Processed
DO   MPI Display Only Query           TF   Treating Facility Inquiry
Select Action:Quit// ED  <RET>  Edit Patient Data
NAME: SERIOUS,SAM//  <RET>
DATE OF BIRTH: 07/22/1941// 08/22/1941  <RET>
SOCIAL SECURITY NUMBER: 33333333// 333333333  <RET>
DATE OF DEATH:
```

Figure 45: Edit Patient Data

```
MPI/PD EXCEPTION ACTIONS        Nov 02, 2001@11:06:33     Page: 1 of 1
MPI/PD EXCEPTION HANDLING ACTIONS.

----Exception Data-----------------------------------------------------
 1   Name:   MERRY,MARY
 2    SSN:   333333333
 3    DOB:   AUG 22,1941
 4    DFN:   3
 5    ICN:   1003333333
 6    Date of Death:
 7   Exception Type: Required Field(s) Date of Birth
 8   Exception Date: Nov 02, 2001
     Exception Status: NOT PROCESSED

         Enter ?? for more actions
AUD  Patient Audit                      SPI  Single Patient Init to MPI
PI   Patient Inquiry                    ED   Edit Patient Data
HI   Hinq Inquiry                       UPD  Update Status to Processed
DO   MPI Display Only Query             TF   Treating Facility Inquiry

Select Action:Quit// SPI <RET>  Single Patient Init to MPI

Attempting to connect to the Master Patient Index in Austin...

Patient was not found in the MPI...

Adding Patient to Master Patient Index...

Enter RETURN to continue or '^' to exit:
```

Figure 46: Single Patient Init to MPI

Figure 47 shows that the screen is then updated with the new ICN and an Exception Status of "PROCESSED."

```
MPI/PD EXCEPTION ACTIONS        Nov 02, 2001@11:06:35     Page: 1 of 1
MPI/PD EXCEPTION HANDLING ACTIONS.

----Exception Data-----------------------------------------------------
 1   Name:   MERRY,MARY
 2    SSN:   333333333
 3    DOB:   AUG 22,1941
 4    DFN:   3
 5    ICN:   1003333333
 6    Date of Death:
 7   Exception Type:     Required Field(s) Date of Birth
 8   Exception Date:     Nov 02, 2001
     Exception Status:   PROCESSED

         Enter ?? for more actions
AUD  Patient Audit                      SPI  Single Patient Init to MPI
PI   Patient Inquiry                    ED   Edit Patient Data
HI   Hinq Inquiry                       UPD  Update Status to Processed
DO   MPI Display Only Query             TF   Treating Facility Inquiry
Select Action:Quit//
```

Figure 47: Exception Status updated to "PROCESSED"

2. SSN Match Failed

This exception occurs when a discrepancy exists in a patient's SSN between your local PATIENT file (#2) and the MPI. The facility's local PATIENT file (#2) may have a pseudo SSN for a patient, while the MPI does **not** have one at all (i.e., the field is not populated in the MPI).

This exception can also occur when an SSN is populated in both your local PATIENT file (#2) and the MPI for the same patient but the values are different (e.g., the site has a pseudo SSN and the MPI has a "national" SSN for the same patient). Based on a review by Patient Administration personnel, it can be decided if the SSN should be updated in your local PATIENT file (#2).

Another example of an event that would cause this exception is a lost connection to the MPI when the patient is being added to the MPI. This would cause the patient to be assigned a national Internal Control Number (ICN) on the MPI but have a local ICN assigned at your site. If a user then updates the patient's Social Security Number, the MPI finds a potential match but the ICN is different than on your system.

Resolution:

First, determine if the SSN you have is correct. If not, use the Edit Patient Data option to correct it. Once corrected (or if it is already correct), use the Single Patient Initialization to MPI option to initialize this patient to the MPI If the SSN matches now, the patient will automatically be matched up with the entry on the MPI.

If the SSN still does not match, you will get a list of one patient or more from which to pick a match, or be allowed to add this patient to the MPI. If you believe that these two patients are the same, select the person from the list. You will be asked if you are sure since the SSN doesn't match. If you have verified that the SSN you have for this patient is correct, send a message to the CMOR noting what you have found so they can correct their entry. Once the CMOR is corrected the MPI and treating facilities will automatically be updated.

3. Name Doesn't Match

This exception is used to inform Patient Administration personnel that the Name returned from MPI does not match the entry in your local PATIENT file (#2). This message should be forwarded to the Patient Administration Coordinator at your facility to see if this patient's name should be updated in the local PATIENT file (#2).

Another example of an event that would cause this exception would be a lost connection to the MPI when the patient is being added to the MPI. This would cause the patient to be assigned a national Integration Control Number (ICN) on the MPI but have a local ICN assigned at your site. If a user then updates the Name, the MPI finds a potential match but the ICN is different than that on your system.

Resolution:

Use the same resolution as with SSN, substituting Name for SSN.

4. Death Entry on MPI not in V*IST*A

This exception message occurs when the Date of Death field is populated in the MPI for a particular patient. However, that same field is **not** populated in your local PATIENT file (#2).

Resolution:

The resolution for all three Death Entry Exceptions is the same. The first step is to use the Patient Inquiry to identify the patient's CMOR site. If you are the CMOR, use the Display Only Query to identify that the MPI data and your facility data match. If they do match, no action is necessary. If you are not the CMOR, do a HINQ inquiry to see if the patient has a Date of Death there and contact the CMOR to resolve the issue. If you are the CMOR, and the data has not been updated on the MPI, you will want to trigger an A08 message to the MPI. This can be done by re-entering the Name, DOB, or SSN (or any of the other fields that MPI/PD monitors, including Date of Death). Use the Update Status to Processed option when you have resolved the exception. This will take the exception off the list.

5. Death Entry on V*IST*A not in MPI

This exception message occurs when the Date of Death field is populated in your local PATIENT file (#2) for this patient. However, that same field is **not** populated in the MPI.

6. Death Entries on MPI and V*IST*A DO NOT Match

This exception occurs when the MPI and your local PATIENT file (#2) have different Date of Death values for the same patient.

7. Potential Matches Returned

During the initialization of your site to the MPI you are likely to receive many of these exceptions. It is very important for the sharing of information between sites that they be resolved as quickly as possible. After this first large batch of potential matches has been resolved, you will still receive occasional exceptions of this type that need to be resolved.

During the List Manager display when presented with a list of potential matches, the following message may also be displayed to the user if this ICN is already in use by another patient.

```
You are attempting to assign an ICN that has already been assigned
to another patient in your Patient file.
An Exception will be recorded noting that these 2 patients
need to be reviewed to determine if they are a duplicate
```

Resolution:

Once you have determined either the correct match or that the patient is indeed new to the MPI, use the Single Patient Initialization to MPI to resolve the exception. If you received the message that this ICN has already been assigned to another patient in your PATIENT file (#2), see the resolution for Multiple ICNs Exceptions.

Sample Exception Message for Patient Administration Personnel

This section shows a sample of an MPI/PD Exception message that requires action by Patient Administration Personnel who are members of the mail group RG CIRN DEMOGRAPHIC ISSUES. It is provided to give you an idea of what to expect to receive and the steps for resolving the problem.

MPI/PD Exception Message: Multiple ICNs

This message is intended for Patient Administration personnel who are responsible for resolving potential duplicates in the PATIENT file (#2). The message indicates that the MPI identified both of these patients as being the same person. However, MPI/PD Business Rules prevent two or more patients in the same PATIENT file (#2) from having the same ICN.

```
Subj: CIRN Exception: Multiple ICNs  [#707] 21 Sep 99 02:03  1 Line
From: HL7 Msg # 2001179104  In 'IN' basket.   Page 1  *New*
-------------------------------------------------------------------------

Multiple ICNs: Patient dfn ###### returned ICN 1000000000 that is already
in use for Patient dfn ######  use Duplicate Record Merge to Checkout
pair

Select MESSAGE Action: DELETE (from IN basket)//
```

Resolution:

To resolve this, it is necessary to look up both of the patients whose DFNs are provided and determine if they are a duplicate pair. If it is a duplicate pair, determine which patient is correct. The wrong patient should be ZZ'ed out and leading zeros should be added to the SSN. Use VA FileMan to view which of the patients has a "national" ICN – looking at the Integration Control Number and Locally Assigned ICN fields, also display the Coordinating Master of Record. If you are not the Coordinating Master of Record, log a NOIS asking for assistance since you are not the CMOR. If you are the CMOR, continue on. If the patient that was "ZZ'd" has an ICN (national – no value in the Locally Assigned ICN field), use the Inactivate Patient from MPI option to remove this patient from the MPI. That will clean up the local ICN and CMOR data, as well as clean up the MPI. Then use the Single Patient Initialization option for the "correct" patient, to get that patient added to the MPI. If the "ZZ'd" patient has a Local ICN (Locally Assigned ICN field set to yes), delete the Integration Control Number, Locally Assigned ICN and Coordinating Master of Record fields for this patient, via VA FileMan. If patients are the same, Duplicate Record Merge should be utilized to get the patient down to one record.

(For more information on MPI/PD Business Rules, see “Appendix A – MPI/PD Business Rules” in this manual.)

Appendix D – Additional Technical Information

Changes to Patient Names: PID Segment Built for HL7 Message

Patch DG*5.3*149 introduces functionality that changes a patient's name if it does not conform to the upcoming national naming conventions. This change is made when a PID segment is built for an HL7 message. PID is the HL7 segment that contains the patient's name and other demographic information. If the name does not conform to this format, it is updated in your site's PATIENT file (#2).

This change to the PID segment building routine is a pre-step to the Name Standardization Project. It is designed to allow the MPI to receive patient names in a uniform format for comparison matching. Patient names are now reformatted as follows:

Last Name~comma~First Name~space~Middle Name/Initial~space~Suffix

(Please note that the tilde (~) is used for readability. It has no meaning other than to separate each piece of the name.).

The Identified suffixes are:

- JR, SR, ESQ, MD, and DR.
- Roman Numerals II through IV, and VI through VIII.
- 3RD is changed to III and 2ND is changed to II.

Extra spaces to the right of the comma are now removed. The apostrophe (') will now be removed (e.g., O'BRIEN is changed to OBRIEN). The Name field is updated only if it is changed. And, if the name is changed, the PIMS Patient Name Changed bulletin will be triggered as it would be with any other patient name change.

The following example shows a PIMS Patient Name Changed bulletin generated from and updated to this patient Name field in your local PATIENT file (#2). Notice that the patient name "DOE SR.,ROBERT F." was changed to "DOE,ROBERT F SR".

```
Subj: PATIENT NAME CHANGED  [#99999999] 07 Jan 99 14:37  5 Lines
From: SMITH,JANE - COMPUTER SPECIALIST (ANY TOWN) in 'IN' basket. Page 1
 **NEW**
---------------------------------------------------------------------

NAME:  DOE,ROBERT F SR
SSN :  000-00-1754
DOB :  APR 19,1922

Previous name was 'DOE SR.,ROBERT F.'
```

Figure 48: Change to patient data generates PIMS Patient Name Changed bulletin

There is the possibility that this could result in a large number of patient names being changed, all within a close period of time. (Especially during the initialization phase of MPI/PD and MPI.) This change will

also result in the generation of corresponding A08 Patient Update messages. If there are large numbers of A08 Patient Update message generated, this may cause a delay in the Treating Facility ("add me") messages getting out to the CMOR. If your site has had the DG*5.3*149 patch installed for some time now, the number of changes to patient names may be reduced.

Pseudo Social Security Numbers Impact on MPI

Social Security Number (SSN) is one of the fields used to assist the MPI **V*IST*A** in looking up patient entries on the MPI (Austin). There are occasions, however, when patient interaction must take place with the MPI without using an SSN. This situation presents itself when a patient has been assigned a pseudo-SSN. (Pseudo-SSNs are assigned to patients who cannot give their correct SSN or who were never assigned one.)

Patients with pseudo-SSNs can be sent to the MPI (Austin) for a national ICN and CMOR assignment. However, pseudo-SSNs will NOT be used to assist in the lookup of that patient entry on the MPI. Additionally, if that patient's correct SSN is known to the MPI from another facility, it will NOT be uploaded to the PATIENT file (#2) to overwrite the pseudo-SSN for that patient. An exception e-mail message is sent to the MPIF EXCEPTIONS mail group on FORUM informing the members that both the SSN in the MPI and in your local PATIENT file (#2) do not match and provides you with both numbers. The SSNs can then be checked to see if your local PATIENT file (#2) entry should be updated.

Test Patient Records Not Sent to MPI

Test patients (i.e., patient records which contain five leading zeros in the SSN field) and patients with names that begin with the characters "ZZ" (also often used in testing) are not sent to the MPI. If a patient is already on the MPI and is ZZ'd, this patient will automatically be inactivated from the MPI (following all the rules for inactivating a patient from the MPI). In a future patch, patients that have their SSN changed to 5 leading zeros will also be inactivated automatically from the MPI.

Appendix E – Data Stored at the MPI (Austin)

Several groups have expressed an interest in know what data (fields) are stored on the MPI in Austin. This section has been included as a means for sharing the data.

Integration Control Number (ICN)
Surname
First Name
Middle Name
Name Prefix
Mother's Maiden Name
Date Of Birth
Claim Number
Gender
Date Of Death
Social Security Number
Name Suffix
CMOR
Place Of Birth - City
Place Of Birth - State